CENTRE OF INFORMATION TECHNOLOGY

Research Report

Role of Business Analysts in Organizations

Submitted by

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Abstract

Projects are the context within which new products, modifications, migrations, changes in the law, updates to a company, and product offerings are delivered. The agile way of operating has created an avenue where companies can streamline their initiatives' execution, enabling businesses to get to the market quicker and effectively. Organizations have tried to align themselves with the paradigm of agile implementation, and their challenges come with that. The distinct functions and duties that need to be supported by key project team members are at the core of this alignment. Business Analysts (BA) are focused on the breakdown of operations, processes, systems, and business practices. BAs are at the core of a project team that has felt a need to develop and implement a new way of working to embrace agile ways of working with various priorities and outcomes. However, there appears to be little awareness of this discipline within the academic community, and little research has been discovered into the procedures and principles employed by business analysts. This research aims to determine how the business analyst role (BA) helps improve a business's performance. This project adopts a quantitative research method. Data was collected via an online survey tool through convenience sampling in India. The research model for this research is a Business Analysis Model (BAM). It has 4 dependant variables, namely Stakeholder Management, Analytical Skills, Technical Skills, and Communication. It also has 3 independent variables: success factors, Business performance, and Improved revenue, in which all these 7 variables direct the Actual firm growth. The flow of the model is given in figure 96. The survey has 20 questions and has been distributed through WhatsApp and Facebook, popular social media platforms. The Chi-squared method and descriptive statistics were used for data analysis. The rest of the research report is organized as follows: first, the relevant literature on factors involved in the effectiveness of BAs was reviewed, and hypotheses for this research were formulated. Then the research design for this research was discussed. Research design is followed by the research results, discussion of these results, and limitations. The last sections are references and appendix. The researcher concluded that the discussions and findings support 14 hypotheses except hypothesis 1 and all the research questions. All 4 dependent variables: stakeholder management, technical skills, analytical skills, and communication, are influential factors for the three independent variables: project success factor, improved business performance, and revenue, significant factors for actual firm growth.

Keywords: Business Analysis, Business Analyst, Data Mining, Decision Making, India

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GLOSSARY

- **EHR4CR - The project EHR4CR (**Electronic Health Records Systems for Clinical Research**)** aimed to improve the design of patient-centric trials by developing a platform that provides access to existing patient electronic health record systems (EHRs).
- **KPI indicators** – By setting the Key Performance Indicators, the company enables the project team to make wise business decisions about its direction.
- **PRISMA -** Preferred Reporting Items for Systematic Reviews and Meta-Analyses. PRISMA review is an evidence-based minimum collection of items for reporting in systematic reviews and meta-analyses. PRISMA focuses on the reporting of randomized trial evaluation reviews but can also be used as a basis for writing systematic reviews of other types of Study, particularly intervention evaluations
- **BA –** Business Analyst helps in guiding businesses in improving processes, products, services, and software through data analysis
- **BABOK -** Business Analysis Body of Knowledge is the standard for business analysis and is for professionals who perform business analysis tasks.

1.INTRODUCTION

Projects are the context within which new products, modifications, migrations, changes in the law, updates to a company, and product offerings are delivered. To deliver ventures, different methodologies are employed. The different operating ways have created an avenue in which companies have been able to streamline their deliveries of initiatives, helping enterprises get to the market quicker and more effectively. Organizations have sought to align themselves with various delivery systems, and with it comes to their challenges (Crossan, 2015). The various tasks and duties that need to be supported by key project team members are at the center of this alignment. Business analysts are at the forefront of these prominent project team members to ensure that technology is used correctly to accomplish the company's goals. Business Analysis overgrows worldwide. The Business Analyst has a vital role in guaranteeing the appropriate use of technology to attain an organization’s objectives. A Business Analyst also employs the part of the Product Owner (Dawkins, 2014). Understanding what is expected and communicating this to a development team is the center of both positions. Many of the skills needed by product owners are precisely the abilities that business analysts are qualified and skilled in user identification and management of stakeholders, reviewing requirements, specification, Communication, and assessment (Chiang, 2018). This critical mediator position is recently in high demand in most countries. So, employees should be well trained for the business analyst role (Arvidsson, 2014). But from the thoughts learned from the literature articles, it is discovered that no recognition exists for this role. Learnings and findings through this research may give a clearer idea about this role's characteristics and specifications. To survive in the fierce competition market, it is essential to understand the organizations' influential factors to choose Business Analysts (Rahul, 2016). The research aims to find out the significant factors for the choice and role of BA in India. Chapter 1 introduces the background and objective of this research. Chapter 2 discusses the findings in the existing literature. The PRISMA literature review has been performed for 64 previous articles in a related area. The literature review forms the basis for the research. The finding through the literature review resulted in establishing the research motivation. Chapter 3 discusses the research design. The research questions are revisited, and formulated

hypotheses are presented in this chapter. A mapping among the researcher questions, the hypotheses, and the hypotheses-testing methods are also presented and discussed. The core research methods and the framework to establish the research process are part of this chapter's discussion. Chapter 4 is the results of survey data analyses. Descriptive Analysis, Chi-Square Analysis has been performed to test the relationship between variables. Lastly, the researcher presented the conclusion of this research in Chapter 5.

1.1 Background

The success of project delivery is a core dependence on a company's ability to expand, evolve and even succeed in the competitive world marketplace to some degree. Through projects, we build enhanced business processes and new products and services as a response to changes in the business environment. The digital age brought new opportunities and boundary-less access to multiple market places (Crossan, 2015). Many companies' significant challenge is how to sell rapidly and effectively while also preserving key project milestones and gates of approval. At the core of this problem is how to remain essential and cutting edge, with the volume and size overhead. More importance placed on process-associated skills and abilities may form competitive advantages. Stakeholder requirements can be prioritized more, and projects may attain success only after delivering clients' actual needs (Chiang, 2018). Developments in Big Data Analysis create administrators' opportunities to find the relevant data in a project (Duan, 2020). The purpose of Information Systems (IS) has evolved over the last three years from a professional knowledge field.

Research shows that aligning company needs with the delivered information systems is a crucial concern for many senior officials (Rahul, 2016). However, IS project failure being an ongoing issue. Statistics reported in 2014 show that only 28% of IS projects were categorized as ‘successful’ (Charles, 2014). Although subsequent surveys reported a small increase in the proportion of successful projects, this peaked at 35% in 2006 and dropped to 32% in 2015 (Erikson, 2015). According to the BA Times, the number of positions for all US market analysts will rise from the current vacancies of 364,000 to 2,720,000 by 2020 (Jeffrey, 2019). Case study research into a UK public sector organization found that an estimated 60 percent of completed projects did not meet the original goals reported, and 20-30 percent of all IS development projects are viewed as overwhelming failures, while 30-60 percent are partial failures (Ogden, 2014). Definitions of this position place it within the business context, focusing on information systems and taking a more holistic view of many aspects of a business system. The company analyst's role is unique in that the business analyst has a distinct role and related duties during each of these typical project phases. Through the business analyst's leadership, the technical team captures and thoroughly

understands requirements before developing and implementing solutions (Dawkins, 2014). Throughout the project life cycle, the business analyst acts as a intermediary between the business community and the technical solution providers.

1.2 Objective of the Research

The Business Analyst has a vital role in guaranteeing the appropriate use of technology to attain an organization’s objectives. This mediator position has more scope in most countries. So, employees should be well trained for this role. Learnings and findings through this research may give a clearer idea about this role's characteristics and specifications. The researcher is born and brought up in India. The researcher aimed to explore the factors that influence the Role of Business Analysts in Organizations in India, which can help understand India's current industrial expectations and help organizations adjust their business strategy. The data was collected through an online survey. The questionnaire was prepared in Qualtrics, an online survey tool, and distributed to respondents via WhatsApp and Facebook, the social media platforms. Descriptive Analysis and Chi-Square Tests were used to examine the relationship between the variables.

1.3 Research Question

Business Analysis has become vital in current market trends. While industries face intense competition, consumers and employees are influenced by factors that have made the business analyst's role more demanding. In this regard, it is necessary to understand the influential factors for the choice of analysts. Due to time limitations, the research is limited to mainly IT employees and few students in India. 90% of the survey focused on IT employees, and only 10% included the students. The reason for choosing IT employees majorly in the survey is because they have real-world IT experience. On the other hand, the main reason to include few students in the research is to understand their interests and knowledge about Business analysis, which can help understand the future of Business analysis in India. Also, only students who are in the last year of their studies, those about to finish their courses, are only included in the survey. They will have some knowledge about the current competitions and opportunities in the market. The survey is not sent to the freshers. Students are involved in the research to understand the current trends, knowledge, and understanding of their current marketing competition strategies. Researching in India can help understand the role of business analysis and business analysts' value in India. Such importance is

explored through the existing literature review. The next chapter presents the PRISMA literature review, where the hypotheses have been developed as well.

Main Research Question

What are the factors that influence the role of Business Analyst in Small to Medium-Scaled enterprises in India?

1.4 Conclusion

Organizations have tried to align themselves with the paradigm of agile implementation, and their challenges come with that. The distinct functions and duties that need to be supported by key project team members are at the core of this alignment. The role of business analysts has been the subject of this manuscript. In bringing this manuscript to a conclusion, companies must rapidly deliver their latest and improved goods and services to the consumer due to digital and online media (Flothmann,2018).

2.LITERATURE REVIEW

2.1 Introduction

The Exploration is to find the importance and value of a business analyst's role in SMBs. According to the literature, the business analysis comprises understanding and defining how companies work to accomplish their complete skills. It incorporates organizational goals and recognizes strategies an organization needs to follow to attain these goals and objectives. (Duan, 2020). BA consultants must know that their role is the technical part and serve the rest of the association to comprehend their results' sense and implication, counting the Study's expectations and confines. Few previous experimental indications lead to the understanding that BA can advance a firm's invention accomplishment in new creation novelty and significance, thus taking the best competitive lead. Those experiments help a business to progress more expressive new goods using the visions produced with ecological perusing. Based on these aspects and the level of success from previous industrial experiences learned through the case studies paves the way for more in-depth research to create a questionnaire and find the role and importance. The statements also charted that around 2022, 88% of corporations will have implemented client and entity big data analysis, which means that the business analyst role will transmute in line with the changes. Improved demands for soft skills such as communications and critical thinking are in the business will develop more widespread (De Lusignan et al., 2014).

2.2) PRISMA LITERATURE REVIEW

2.2.1) Study Selection Criteria and Search Strategy

This literature review follows the PRISMA guideline. A systematic reviewed of 64 articles published between 2014-2020 was performed. An online search was conducted through EBSCOhost and ScienceDirect on 29th Sep 2020. The search included relevant keywords in English combined with an appropriate Boolean logical operator such as “OR,” “AND” to ensure a sensitive search strategy. The search strategy returned to 691 articles. The researcher did a preliminary screening of those articles using a summary and abstract check, excluding duplicates and papers out of the topic. According to inclusion and exclusion criteria, 64 articles remained, which are used for review in this research.

Search Phrases

Business Analysts AND Business Analysis AND Importance AND Skills

Table 1 Inclusion / Exclusion criteria

Inclusion Criteria	**Exclusion Criteria**
1.Full-Text 2.Published within a selected period (2014-2020) 3.Published in the above-selected database. 4.In English 5.Key words: Business Analysis, Business Analyst, Data Mining, Decision Making, India 6.Related with the factors. 7.Peer reviewed articles	1.Uncompleted studies 2.Non-English 3.Outside the selected time 4.In other unrelated databases (teaching, texture, health, etc.). 5.Not academic peer-reviewed articles 6.not accessible

PRISMA FLOWCHART

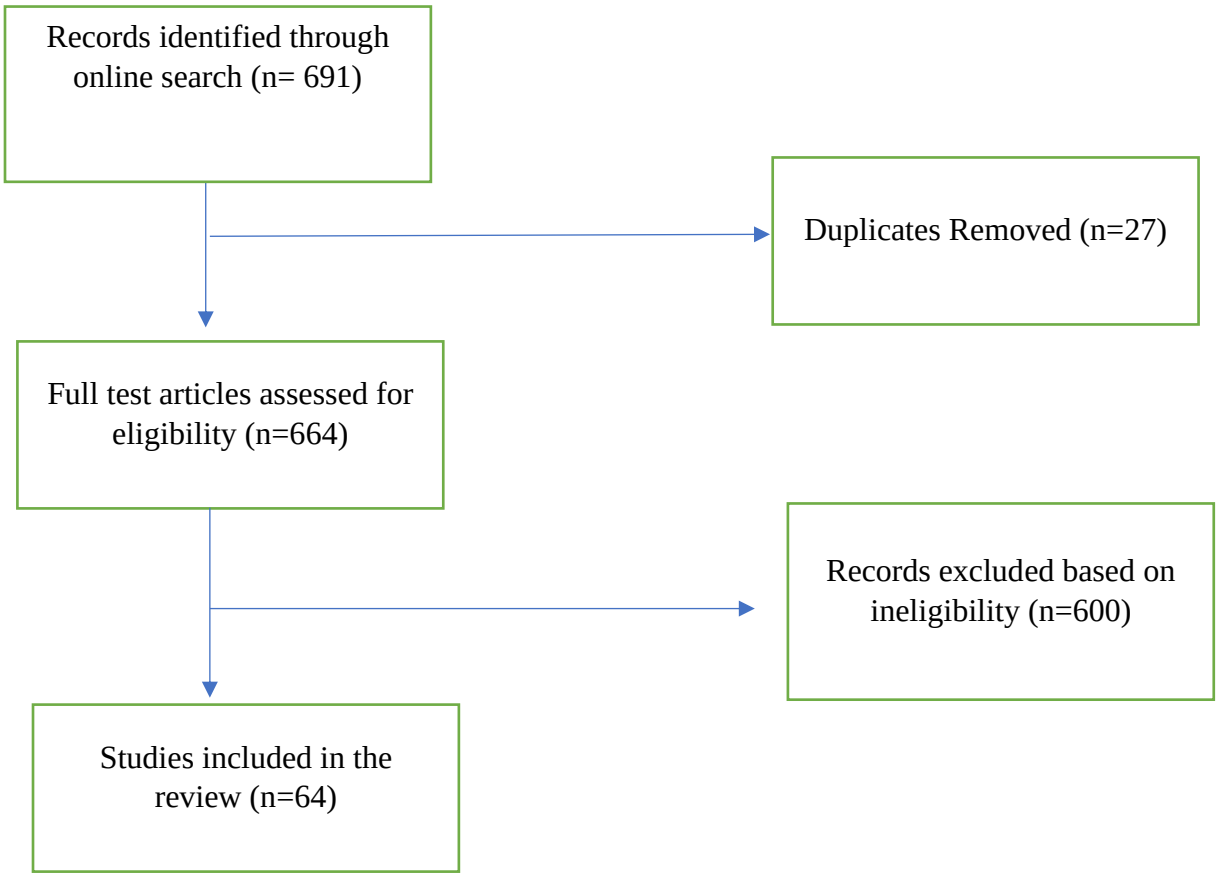


Figure 1 PRISMA flow chart

2.2.2) Study Selection Procedures

In an attempt to perform an exhaustive search identified six electronic sources of relevance to Software Engineers:

- IEEExplore
- ACM Digital library
- Google Scholar (scholar.google.com)
- Citeseer library (citeseer.ist.psu.edu)
- Inspec (www.iee.org/Publish/INSPEC/)
- ScienceDirect (www.sciencedirect.com)

The search strings were used on 6 digital libraries such as INSPEC, El Compendex, Science Direct, Web of Science, IEEExplore, and ACM Digital library 17. The search strings needed to be adapted to suit the specific requirements of the different databases. Also, the researchers searched several individual journals (J) and conference proceedings (C) sources like

- Empirical Software Engineering (J)
- Information and Software Technology (J)
- Software Process Improvement and Practice (J)
- Management Science (J)
- International Software Metrics Symposium (C)
- International Conference on Software Engineering (C)
- Evaluation and Assessment in Software Engineering (manual search) (C)

These sources were chosen because they had published papers on the topic.

2.2.3) Study Quality Assessment

In addition to general inclusion/exclusion criteria, it is considered critical to assess the "quality" of primary studies:

- To provide still more detailed inclusion/exclusion criteria.
- To investigate whether quality differences explain differences in study results.
- To guide the interpretation of findings and determine the strength of inferences.
- To guide recommendations for further research.

In this research, few quality checks are done while selecting the papers which should

- Guide the interpretation of findings and determine the strength of inferences.
- Be a peer-reviewed article between 2014- 2020
- Guide recommendations for further research.
- Depicts the importance of the role

Detailed quality assessments are usually based on "quality instruments" that are checklists of factors that need to be evaluated for each Study. If quality items within a list are assigned numerical scales, numerical assessments of quality can be obtained. Generic things relate to study designs, such as survey designs, experimental designs, and qualitative study designs. Specific items related to the review's subject area, such as the cross-validation method used in a study of cost estimation prediction accuracy (Block, 2019). Checklists are also developed by

considering bias and validity problems that can occur at the different stages in an empirical study:

•Design

•Conduct

•Analysis

•Conclusions.

There are many published quality checklists for different types of empirical studies. Before undertaking a systematic review, researchers should ensure that a systematic review is necessary. In particular, researchers should identify and review any existing systematic reviews of the phenomenon of interest against appropriate evaluation criteria. The above mentioned 4 factors are conducted as below in the research process.

Design – This research follows a Quantitative approach and hence the survey questionnaire is designed related to the business analysis concepts in the IT industry.

Conduct – Next, the survey is conducted with the IT employees and few students in India. It's been sent to them through social media ways like Whatsapp and Facebook. Consent was asked before the start of the survey, and people who only given consent are allowed to attend the survey.

Analysis – After 2 weeks of the time, the survey was closed. All the responses were collected, and valid and invalid responses were analysed first. Based on the analysis, the invalid responses are deleted, and finally, only 623 valid responses are taken further into the in-depth analysis.

Conclusions – Based on the survey results' findings, the solutions are figured out for each research question.

Based on all the criteria mentioned above and procedures, 64 articles have been filtered for this research purpose from n number of items. Below given Figure 2 is the Literature review mind map created for the final 64 papers which are used for the research.

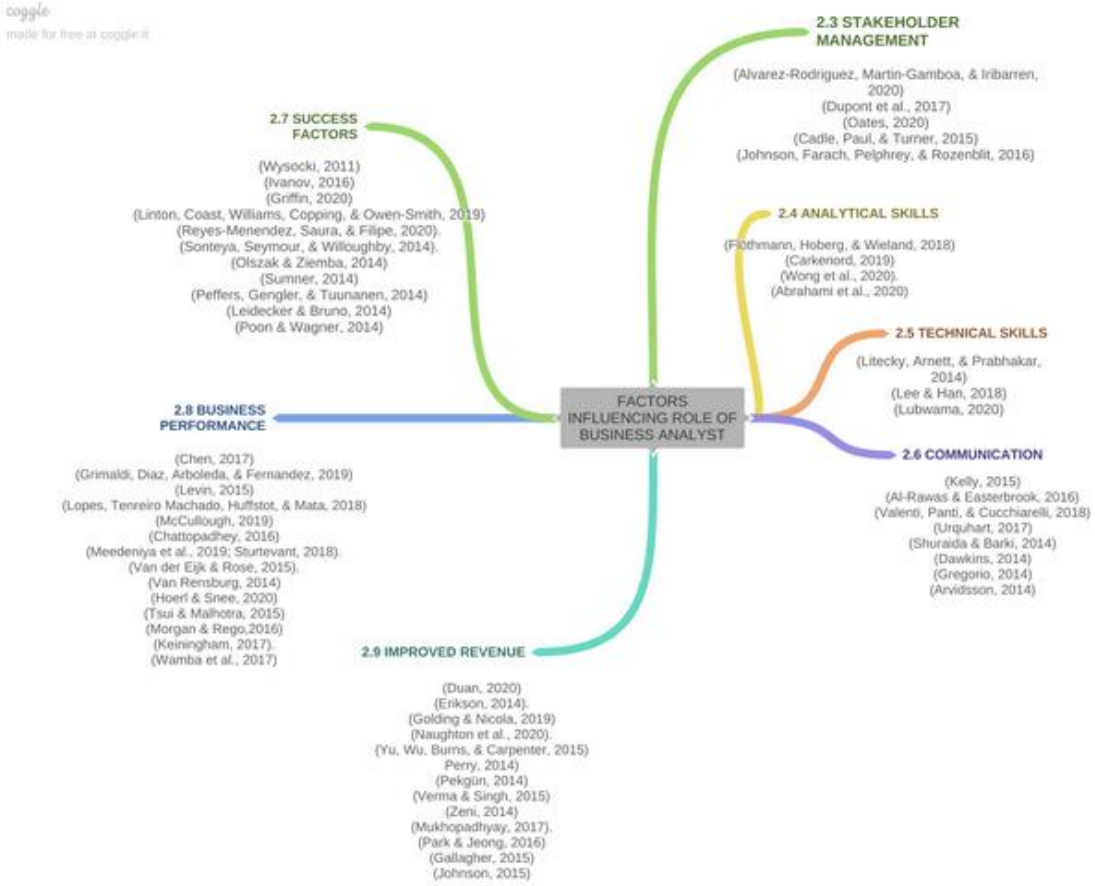


Figure 2 Literature Review Mind Map

Table 2 List of articles in PRISMA literature review

AUTHOR AND YEAR	ARTICLE NAME	KEY FINDINGS	RESEARCH AREA & THE MAIN FACTORS	RESEARCH METHOD
(Brady & Denison, 2016)	The Business Analyst - In Training	Organizations use their database to help in making business decisions. BA helps in this process by applying analytical skills	Analytical Skills	Quantitative
(Wysocki, 2011)	The business analyst/Project manager	Project success is calculated in terms of the business value predicted. BA improves the business value and performance	Success Factors	Mixed
(Alvarez-Rodriguez, Martin-Gamboa, & Iribarren, 2020)	The sensitivity of operational and environmental benchmarks of retail stores to decision-makers' preferences through Data Envelopment Analysis	By detailed data analysis, decision making is improved. BA plays a vital role in decision making	Stakeholder Management	Mixed
(Chen, 2017)	Continuous Delivery: Overcoming adoption challenges.	Different clients have different requirements.BA helps in gathering the requirements from them without any conflicts	Business Performance	Quantitative
(Ivanov, 2016)	The Role of the IT Business Analyst in a Big Data Project-Data-Driven Approach to Business Analysis	The Big Data business analyst's duties are to identify the data needs of various business areas; to provide the relevant information, figures, and justifications required for the organization to make informed decisions.	Success Factors	Mixed
(Duan, 2020)	Understanding the impact of business analytics on	BA improves environmental scanning – this enhances a company's innovation	Improved Revenue	Quantitative

	innovation: European journal of operational research			
(Dupont et al., 2017)	Business analysis for a sustainable, multi-stakeholder ecosystem for leveraging the electronic health records for clinical research platform in Europe	By enhancing and speeding up existing processes, BA solutions promise to transform the organizational framework for optimizing the value and benefits for all stakeholders involved sustainably.	Stakeholder Management	Qualitative
(Erikson, 2014).	Global health business: the production and performativity of statistics in sierra leone and Germany	As business apparatus, Business analysis statistics can operate as global operands—manipulatable objects—in the service of the worldwide market fundamentalisms.	Improved Revenue	Mixed
(Golding & Nicola, 2019)	A business case for artificial intelligence tools: The currency of improved quality and reduced cost	If AI tools are adopted with population health goals in mind, the structure of value-based payment models will serve as a framework for reimbursement of AI that does not exist in the fee-for-service system.	Improved Revenue	Quantitative
(Griffin, 2020)	Becoming of use as an analyst: Imagining something that was never there before	Both analyst and analysand are required to find ways to expand their receptivity to sensory experience and to cultivate their imaginative capacities in a manner that make emotional growth possible	Success Factors	Qualitative
(Grimaldi, Diaz, Arboleda, & Fernandez, 2019)	Data maturity analysis and business performance	Data consistency, data usage, and data protection are the three more frequent conditions to better customer experience and provider operations efficiency.	Business Performance	Qualitative
(Kelly, 2015)	On Management:	While the BA role has similar responsibilities towards the development team as a Product Manager, the part is	Communication	Qualitative

	Business Analyst's Role	very different and requires different skills and experience		
(Linton, Coast, Williams, Copping, & Owen-Smith, 2019)	Developing a framework of quality indicators for healthcare business cases: a qualitative document analysis consolidating insight from expert guidance and current practice	Seven themes were identified within the qualitative document analysis (purpose, strategic priorities, options, benefits, costs, risks, and evaluation).	Success Factors	Qualitative
(Levin, 2015)	Developing greater business intelligence	A BA's acquiring business knowledge will help dentists be informed about general **business** activities, trends, and methods before focusing on more specific areas.	Business Performance	Mixed
(Lopes, Tenreiro Machado, Huffstot, & Mata, 2018)	Dynamical Analysis of the global business-cycle synchronization	This paper proposed a BA's computational approach to the modeling of world economies based on time series.	Business Performance	Qualitative
(McCullough, 2019)	The financial and business analysis capacities of the state and local public health workforce	In general, administrators, managers and executives, older individuals, and persons working in decentralized or shared departments tended to have higher financial skills proficiency levels.	Business Performance	Quantitative
(Naughton et al., 2020).	Ethical frameworks for quality improvement activities: An analysis of international practice	This paper demonstrates a need for appropriate oversight and responsive infrastructure by a BA for quality improvement underpinned by ethical frameworks that build equivalence with research oversight.	Improved Revenue	Qualitative
(Oates, 2020)	Responsibility as professional leadership and decision making:	A significant theme of 'Interpretations of responsibility' emerged, with two subthemes:	Stakeholder Management	Qualitative

	Interviews with non-medical responsible clinicians	‘Responsibility as leadership ‘and ‘Responsibility as decision making’ for a BA		
(Chattopadhey, 2016)	Effective business solutions with big data analytics: Key for business growth	The Study indicates that mutual funds operating in India do have the power to influence BA's market indices changes.	Business Performance	Qualitative
(Reyes-Menendez, Saura, & Filipe, 2020).	Marketing challenges in the #MeToo era: Gaining business insights using an exploratory sentiment analysis	The present study seeks to provide a deeper understanding of the #MeToo movement's challenges by identifying business and marketing activities' main issues.	Success factors	Qualitative
(Sonteya, Seymour, & Willoughby, 2014).	Towards an understanding of the business process analyst: An analysis of competencies	Business and organizational knowledge are seen as necessary, while technical competencies were considered the least important.	Success Factors	Qualitative
(Meedeniya et al., 2019; Sturtevant, 2018).	Modular architectures make you agile in the long run	Researchers have developed ways a BA think about, visualize, and measure software modularity and its erosion objectively and quantifiably.	Business Performance	Qualitative
(Van der Eijk & Rose, 2015).	Risky business: Factor analysis of survey data - assessing the probability of incorrect dimensionalization	The risk of over-factoring depends on a variety of conditions, including the character of the underlying population distribution, the Number of items in the Analysis, by a BA	Business Performance	Qualitative
(Van Rensburg, 2014)	Supporting business process design through a business	In reality, business process design proves, at best, to be difficult when capturing and translating the complexity of business systems by a BA.	Business Performance	Qualitative

	fractal approach			
(Wong et al., 2020).	Impact of migraine on workplace productivity and monetary loss: A study of employees in the banking sector in Malaysia	This Study highlights the unmet needs in migraine management among employees in the banking sector, which can be played well by a BA.	Analytical Skills	Quantitative
(Yu, Wu, Burns, & Carpenter, 2015).	Designing cost-efficient randomized trials by using flexible recruitment strategies	As cost becomes a more prominent issue in modern clinical trials, a BA's cost-saving strategies will become more critical.	Improved Revenue	Qualitative
(Cadle, Paul, & Turner, 2015)	Business Analysis Techniques – 72 Essential Tools for Success	The role of the business analyst is to formulate options for a way forward and produce Business cases setting out conclusions and recommendations.	Stakeholder Management	Qualitative
(Johnson, Farach, Pelphrey, & Rozenblit, 2016)	Data management in clinical research: Synthesizing stakeholder perspectives	Collaboration and engagement have been underappreciated but may prove to be easy successes.BA plays a vital role in maintain stakeholder relationship	Stakeholder Management	Mixed
(Flöthmann, Hoberg, & Wieland, 2018)	Competency requirements of supply chain planners, analysts, and personal preferences of hiring managers.	SCM knowledge and analytical and problem-solving ability by a BA were identified as the most critical competencies and were considered three times more important than general management skills	Analytical Skills	Qualitative
(Carkenord, 2019)	Seven steps to Mastering Business Analysis	At the strategic level, a BA focuses on understanding the needs of the business as a whole, its strategic direction, and identifying initiatives that will Enable the business to meet its goals.	Analytical Skills	Qualitative

(Litecky, Arnett, & Prabhakar, 2014)	The Paradox of Soft Skills versus Technical Skills is Hiring	This model utilizes a variant of emerging behavioral decision theory, called Image Theory to develop a two-stage process of IS hiring where the first stage uses technical skills for filtration and the second stage utilizes soft skills for the choice in actual hiring	Technical Skills	Qualitative
(Lee & Han, 2018)	Analysis of Skills Requirement for Entry-Level Programmer/Analysts in Fortune 500 Corporations	The results indicate that the programmer/analysts in the Fortune 500 are expected to fulfill a combination of roles from computer program writers to technical experts and business people.	Technical Skills	Qualitative
(Lubwama, 2020)	Optional Technical Skills	Accumulating specific domain or technology experience gives you added insights and perspectives In a Business Analyst role-specific to that domain.	Technical Skills	Qualitative
(Al-Rawas & Easterbrook, 2016)	Communication Problems in Requirements Engineering: A Field Study	The results confirm that organizational and social issues have a significant influence on the effectiveness of Communication.	Communication	Mixed
(Valenti, Panti, & Cucchiarelli, 2018)	Overcoming communication obstacles in user-analyst interaction for functional requirements elicitation	One of the significant error sources that arise in The current phase is represented by ineffectual Communication between users and analysts.	Communication	Qualitative
(Urquhart, 2017)	Exploring Analyst-Client Communication: Using Grounded Theory Techniques to Investigate Interaction in Informal Requirements Gathering	The case study described in this paper is an attempt to explore how communication takes place and how the analyst and client work toward a shared perception of requirements.	Communication	Mixed

(Shuraida & Barki, 2014)	The Influence of Analyst Communication in IS Projects	Analysis of the two cases suggests that analysts who encourage the use of concrete examples, testing, and validation, and who solicit feedback about users' business processes are likely to understand users' tasks better.	Communication	Qualitative
(Dawkins, 2014)	Corporate responsibility: The communication challenge	Effective Communication by a BA of corporate responsibility depends on a clear strategy that evaluates both the opportunities and the risks to the brand and tailors' messages to different stakeholder groups.	Communication	Qualitative
(Gregorio, 2014)	How the Business Analyst supports and encourages collaboration on agile projects	Agile teams need the Business Analyst (BA) to clearly define and communicate the detailed user stories to ensure a successful product.	Communication	Qualitative
(Arvidsson, 2014)	The corporate communication process between listed companies and financial analysts: A focus on trends and challenges	The findings reveal that quite a few challenges lie ahead in shaping the efficient corporate communication process of tomorrow, which a BA can improve	Communication	Quantitative
(Olszak & Ziemba, 2014)	Critical Success Factors for Implementing Business Intelligence Systems in Small and Medium Enterprises on the Example of Upper Silesia, Poland	Based on the findings, using critical thinking and inductive reasoning by a BA are crucial for implementing BI systems in SMEs.	Success Factor	Qualitative
(Sumner, 2014)	Critical success factors in enterprise-wide information	The findings highlight the issues of project justification, benefits, critical success factors, and factors associated with project "failure." BA plays as a bridge in handling all these factors.	Success Factor	Qualitative

	management systems projects			
(Peffers, Gengler, & Tuunanen, 2014)	Extending Critical Success Factors Methodology to Facilitate Broadly Participative Information Systems Planning	BA helps managers to consider a broader range of development ideas, better balance important strategic, tactical, and operational systems in the development portfolio	Success Factor	Qualitative
(Leidecker & Bruno, 2014)	Identifying and using critical success factors	This article focuses on defining and discussing critical success factors as input into the environmental analysis, resource analysis, and strategy evaluation steps in the strategic planning/strategy development process.	Success Factor	Qualitative
(Poon & Wagner, 2014)	Critical success factors revisited: success and failure cases of information systems for senior executives.	The literature suggests critical success factors by a BA to develop information systems that support senior executives.	Success Factor	Qualitative
(Sumner, 2015)	Risk Factors in Enterprise-Wide/ERP Projects	A Business Analyst analyzes risk factors in implementing traditional management information systems projects	Success Factor	Qualitative
(Hoerl & Snee, 2020)	Statistical Thinking	BA improves Business Performance, helps managers understand the role of statistics in implementing business improvements.	Business Performance	Qualitative
(Tsui & Malhotra, 2015)	Integrating knowledge management technologies in organizational business processes: getting real-time	The framework explains how the “critical gaps” between technology inputs, related knowledge processes, and business performance outcomes can be bridged for the two types of models.	Business Performance	Qualitative

	enterprises to deliver real business performance.			
(Morgan & Rego,2016)	The Value of Different Customer Satisfaction and Loyalty Metrics in Predicting Business Performance	Analysts have advocated several different customer feedback metrics, including average customer satisfaction scores and the number of “net promoters” among a firm’s customers.	Business Performance	Qualitative
(Keiningham, 2017).	The value of different customer satisfaction and loyalty metrics in predicting customer retention, recommendation, and share-of-wallet.	The use of multiple indicators by a BA instead of a single predictor model performs better in predicting customer recommendations and retention.	Business Performance	Qualitative
(Wamba et al., 2017)	Big data analytics and firm performance: Effects of dynamic capabilities	The findings confirm the value of the hierarchical big data analytics capability model's entanglement conceptualization, which directly and indirectly impacts firm performance.	Business Performance	Qualitative
Perry, 2014)	Reducing M&A risk through improved due diligence	Making an M and A deal “work” is one of the most challenging tasks in business. A handful of best Practices by a BA can reduce the risk and give the deal a fighting chance.	Improved Revenue	Qualitative
(Pekgün, 2014)	Carlson Rezidor Hotel Group Maximizes Revenue Through Improved Demand	Starting from the optimization prototyping results in 2008, CRHG consistently measured a 2–4 percent revenue improvement in compliant hotels over non-compliant ones. To date, compliant hotels have increased revenue by more than $16 million annually by applying proper BA techniques	Improved Revenue	Qualitative

	Management and Price Optimization			
(Verma & Singh, 2015)	Improved Web Mining for E-commerce Website Restructuring	E-Commerce websites are considered as faces or representatives of their respective companies. BA helps in designing it in such a way so that it can satisfy user needs.	Improved Revenue	Qualitative
(Zeni, 2014)	The value of analyst interaction with revenue management systems	An experiment that isolated the effects of the system vs. the analysts was conducted. The Study concluded that analyst interaction with an RM system adds up to 3 percent in incremental revenue.	Improved Revenue	Qualitative
(Mukhopadhyay, 2017).	Improving Revenue Management Decision Making for Airlines by Evaluating Analyst-Adjusted Passenger Demand Forecasts	Revenue management analysts (RMAs) often adjust the system forecasts to improve revenue opportunities. This article proposes a method to account for unseen demand and evaluate forecast performance (adjusted or unadjusted) through a forecast monitoring system.	Improved Revenue	Qualitative
(Park & Jeong, 2016)	The Business Analyst as a strategist	An organization's ability to achieve strategic goals through programs and supporting projects depend on its ability to establish a future vision, set strategic goals, select the most Worthwhile projects, and then execute flawlessly.	Improved Revenue	Qualitative

(Gallagher, 2015)	Developing Creative Solutions to Complex Problems	Contemporary real-world problems require creative solutions, necessitating the preparation of a new generation of creative experts capable of finding original solutions to ill-structured problems.	Improved Revenue	Qualitative
(Johnson, 2015)	The Power of the Agile Business Analyst	The Power of the Agile Business Analyst has expanded to include new Agile methods that have emerged or gained prominence	Improved Revenue	Qualitative

Based on the Literature review from the above 64 articles given in Table 2, three factors (Independent Variables) appear to influence Business Analysis's role in organizations. Four elements (Dependent Variables) are considered the essential requirements to be an efficient Business Analyst. They are categorized in the below table 3. The number of papers related to each factor among the 64 articles is categorized in Table 3.

Table 3 Dependent/Independent Variable

Dependent Variables	Independent Variables
Stakeholder Management (6 Papers)	Success Factors (12 Papers)
Analytical Skills (5 Papers)	Business Performance (14 Papers)
Technical Skills (5 Papers)	Improved Revenue (13 Papers)
Communication (8 Papers)	

2.3) Stakeholder Management

This section is related to Hypothesis 1, which answers RQ 1.2 and RQ 1.3.

This section is also related to Hypothesis 2, which answers RQ 1.1, RQ 1.2, and RQ 1.3.

This section is also related to Hypothesis 3, which answers RQ 1.2 and RQ 1.3.

RESEARCH QUESTIONS

RQ 1.1: What are the benefits offered by a Business Analyst that may help in a firm's overall performance?

RQ 1.2: How does a Business Analyst add value to a project in which they are engaged?

RQ 1.3: How does a Business Analyst help in bridging the gap between business and IT?

HYPOTHESES

H1) Stakeholder Management has a positive impact on success factors.

H2) Stakeholder Management has a positive impact on business performance.

H3) Stakeholder Management has a positive impact on improved revenue.

Understanding stakeholder requirements is essential for the success of business ventures to manage stakeholder expectations." Increasing the contribution of the BA to managing stakeholder expectations will add significant value to the project and the organization." As the company analyst also brings meaningful context about the product and the organization to the project, this expertise can be used and leveraged in several ways to support the project. One of the most critical aspects of ventures that business analysts will relate to is managing stakeholder perceptions (Alvarez-Rodriguez, Martin-Gamboa, & Iribarren, 2020). Stakeholders are not necessarily experts on subjects. The clients do not understand the process of software development, and the IT experts do, which may lead them to make unwise choices in turn. In stakeholder meetings where stakeholders have unreasonable or unstated goals or needs, nearly all business analysts with at least a few years of experience under their belts have participated.

Another common problem that business analysts can need to cope with is competing needs and priorities. Defining the project performance criterion is a smart idea (Dupont et al., 2017). The parameters should explicitly state the kind of trade-off that stakeholders can consider between competing demands. Conflicting needs and unreasonable expectations will suck any project out of existence, so learning how to handle them effectively is paramount. Business analysts should become acquainted with stakeholder expectations' most common issues to manage stakeholder expectations effectively. Summarising an organization's needs neatly on a sheet of paper is always possible, but personal needs appear to be far more complex (Johnson, Farach, Pelphrey, & Rozenblit, 2016). To understand them, find some time with as many stakeholders as likely to have one-on-one conversations. The discussions

need to sound casual and unscripted. When stakeholders see the result, their requirements and objectives have on the project, and they are much more likely to build a good relationship with the employees (Cadle, Paul, & Turner, 2015). Although project managers are accountable for managing stakeholders' aspirations, business analysts play a vital role. Examples of these advantages include the flexibility of:

- Scope reduction creep
- Minimizing contradictory parameters
- Trust building. From day one, everybody knows what benefits the project can bring and what it will not provide. Once the project is implemented, this can lead to greater satisfaction and fewer surprises.

According to Schibi Ori (2017), “One could argue that defining the success criteria is one of the core roles of the project manager; however, there is no reason why BAs should not participate and even lead this task, drawing on the experience and knowledge they already have.”

2.4) Analytical Skills

This section is related to Hypothesis 4, which answers RQ 1.2.

This section is also related to Hypothesis 5, which answers RQ 1.1 and RQ 1.2.

This section is also related to Hypothesis 6, which answers RQ 1.2.

RESEARCH QUESTIONS

RQ 1.1: What are the benefits offered by a Business Analyst that may help in a firm's overall performance?

RQ 1.2: How does a Business Analyst add value to a project in which they are engaged?

HYPOTHESES

H4) Analytical Skills have a positive impact on success factors.

H5) Analytical Skills have a positive impact on business performance.

H6) Analytical Skills have a positive impact on improved revenue.

Analytical skill is a problem-solving skill which is essential because they help individuals identify solutions to different issues and make clear decisions and action plans. In brainstorming, identifying patterns, and designing possible solutions, analytic skills are used.

The skillset gives us the ability to collect data, interpret it, and make choices. This capacity requires many skills such as attention to detail, logical reasoning ability, decision-making, and analysis abilities (Brady & Denison, 2016). These skills allow us to analyze topics, both simple and complex.

By solving both basic and complex problems, people with good analytical skills will improve their efficiency and increase their success rate (Abrahami et al., 2020). That is why, according to a 2019 LinkedIn survey, analytical skills are rated among the top skills employers search for in candidates.

People with analytical abilities may find themselves pursuing professions in accounting, finance, and business. According to a SEEK Learning Study, market analysts, logistics managers, legal secretaries, and accountants are career opportunities for individuals with good analytical skills (Wong et al., 2020).

- **Analysis Skill 1: Requirement Elicitation**

Elicitation means being able to 'draw out, and BAs should be able to distil, gather, or collect from their stakeholders' knowledge and requirements. These criteria are the basis of any project. A Business Analyst must be well-versed in using various strategies such as brainstorming, interviewing, observation, and workshops to produce functional, technical, and non-functional requirements while asking the 'right questions to ensure that the knowledge is appropriate.

- **Analysis Skill 2: Documentation**

Requirement Documentation is one of the essential proficiencies and a BA documents constraint by creating use cases, user stories, Business Requirement Document, class diagram, Entity-Relationship diagram, and sequence diagrams for the project the BA is working on. Writing requirements are quite tricky. A business analyst should do everything to ensure that these documents are reliable, precise, complete, and up to date, with so many stakeholders relying on these documents' authenticity.

- **Analysis Skill 3: Critical Thinking to here**

Critical thinking is one of the skills that are not very evident but plays a massive role in an analyst's day-to-day work. A BA is expected to make many decisions

himself, apart from the project manager, such as controlling changes, avoiding creeping scope, deciding the viability of a solution, and taking management decisions in the projects' interests (Wong et al., 2020).

- **Analysis Skill 4: Creativity**

An expert must think out of the box and must come out with new alternatives. Also, in wireframes, prototypes, and even whiteboard drawings, he must creatively represent choices, ideas, and thoughts, and all this calls for a robust creative outlook and approach. For an analyst, creativity is an essential skill as it is the move to innovation, and it is crucial during the life cycle of a project (Flothmann, Hoberg, & Wieland, 2018).

2.5) Technical Skills

This section is related to Hypothesis 7, which answers RQ 1.2 and RQ 1.3.

This section is also related to Hypothesis 8, which answers RQ 1.1, RQ 1.2, and RQ 1.3.

This section is also related to Hypothesis 9, which answers RQ 1.2 and RQ 1.3.

RESEARCH QUESTIONS

RQ 1.1: What are the benefits offered by a Business Analyst that may help in a firm's overall performance?

RQ 1.2: How does a Business Analyst add value to a project in which they are engaged?

RQ 1.3: How does a Business Analyst help in bridging the gap between business and IT?

HYPOTHESES

H7) Technical Skills have a positive impact on success factors.

H8) Technical Skills have a positive impact on business performance.

H9) Technical Skills have a positive impact on improved revenue.

Business analysis as a role can vary a lot from one organization to another. The roles and boundaries are still not well defined since this is an evolving and

growing field. To be a business analyst, you do not have to be an IT person. While it is essential to have a conceptual, technical understanding of a business analyst as it helps analyse the problem to be solved and communicate with technical stakeholders, the analysts do not need to write code or run queries from the database (Lee, 2018). Being a business analyst on an IT project, it is vital to have a basic idea about software systems. Little knowledge of servers, databases, and client-side technology, augmented with reliable logical, systems-thinking will do. Blending both will lead to more efficient communication with the working team (Litecky, Arnett, & Prabhakar, 2014).

2.6) Communication

This section is related to Hypothesis 10, which answers RQ 1.2 and RQ 1.3.

This section is also related to Hypothesis 11, which answers RQ 1.1, RQ 1.2, and RQ 1.3.

This section is also related to Hypothesis 12, which answers RQ 1.2 and RQ 1.3.

RESEARCH QUESTIONS

RQ 1.1: What are the benefits offered by a Business Analyst that may help in a firm's overall performance?

RQ 1.2: How does a Business Analyst add value to a project in which they are engaged?

RQ 1.3: How does a Business Analyst help in bridging the gap between business and IT?

HYPOTHESES

H10) Communication has a positive impact on success factors.

H11) Communication has a positive impact on business performance.

H12) Communication has a positive impact on improved revenue.

Successful communicators must be business analysts, which means that they can organize work sessions, ask the right questions, listen (actually listen) to the answers, and absorb what is being said. Communication does not always happen

face-to-face in today's world. Equally essential is the ability to be a good communicator in a virtual environment (via conference calls or web meetings). By concentrating on the established business priorities, the business analyst helps the project manager keep the team going in the right direction (Kelly, 2015). Not only does this allow the team to remain on track by eliminating distractions, but it also helps avoid the creep of the scope. In the workplace, successful verbal Communication is imperative. Meetings, seminars, and interviews that all involve oral contact are facilitated. The achievement of mastering this capacity is not to speak too much. Learning it may be counter-intuitive, but they want people to talk to them as a business analyst. Feedback, pain points, and criteria are continually elicited (Urquhart, 2017).

2.7) Success Factors

This section is related to Hypothesis 1, which answers RQ 1.2 and RQ 1.3.

This section is also related to Hypothesis 4, which answers RQ 1.2.

This section is also related to Hypothesis 7, which answers RQ 1.2 and RQ 1.3.

This section is related to Hypothesis 10, which answers RQ 1.2 and RQ 1.3.

This section is related to Hypothesis 13, which answers RQ 1.2.

RESEARCH QUESTIONS

RQ 1.2: How does a Business Analyst add value to a project in which they are engaged?

RQ 1.3: How does a Business Analyst help in bridging the gap between business and IT?

HYPOTHESES

H1) Stakeholder Management has a positive impact on success factors.

H4) Analytical Skills have a positive impact on success factors.

H7) Technical Skills have a positive impact on success factors.

H10) Communication has a positive impact on success factors.

H13) Success Factors have a positive impact on Actual Firm Growth.

A software project can be overwhelming from a client's perspective. With diverse views, every company has conflicting goals, limited resources, and multiple stakeholders (Olszak, 2015). There is a tremendous responsibility to accomplish the business target on schedule efficiently and within budget once a project is approved. Also, by specifying specifications, providing input to developers, and checking functionality as it is developed, workers will be required to take time away from their regular duties and responsibilities to contribute to the project. At this stage, a business analyst may have considerable value in various ways alongside research tools, such as those from Microsoft or IBM (Ivanov, 2016). Business analysts help direct organizations through data analysis to develop procedures, products, services, and applications. This agile staff straddles the line between IT and the business to help bridge the gap and enhance productivity. To understand the value of a business analyst for a project, it is essential to look at the general criteria for project success in order (Linton, Coast, Williams, Copping, & Owen-Smith, 2019). In general, successful projects consist of four primary components: completion within the timeline, budget compliance, impact on everyday business, and adoption/usefulness of solutions. In other words, a client wants to know, "Will I get what I want for the amount of money we agreed to within the approved time frame, and allow my employees to keep their day jobs?" A business analyst's primary role is to define and explain the business group's needs for the project. Once the client determines the overall project objective, the business analyst must establish a comprehensive understanding of that objective and ensure that it can achieve the desired result (Griffin, 2020). While the development team works to identify the technical direction and design the solution's functionality, the business analyst works behind the scenes to provide timely information, clarify issues, eliminate roadblocks, and ensure that the project is effectively completed through functional development (Sonteya & Seymour, 2014).

2.8) Business Performance

This section is also related to Hypothesis 2, which answers RQ 1.1, RQ 1.2, and RQ 1.3.

This section is also related to Hypothesis 8, which answers RQ 1.1, RQ 1.2, and RQ 1.3.

This section is also related to Hypothesis 5, which answers RQ 1.1 and RQ 1.2.

This section is also related to Hypothesis 11, which answers RQ 1.1, RQ 1.2, and RQ 1.3.

This section is related to Hypothesis 14, which answers RQ 1.1 and RQ 1.2.

RESEARCH QUESTIONS

RQ 1.1: What are the benefits offered by a Business Analyst that may help in a firm's overall performance?

RQ 1.2: How does a Business Analyst add value to a project in which they are engaged?

HYPOTHESES

H2) Stakeholder Management has a positive impact on business performance.

H5) Analytical Skills have a positive impact on business performance.

H8) Technical Skills have a positive impact on business performance.

H11) Communication has a positive impact on business performance.

H14) Business Performance has a positive impact on Actual Firm Growth.

A Business Analyst assesses system performance and results, most commonly for corporations, although many other roles are involved. They advise businesses on making companies more profitable by lowering costs and growing profits and productivity (Chen, 2017). Every company carries out business analysis, and better business performance is all about good business analysis. Together the keys to superior performance are technology and good business analysis. The projects or operations can be produced to the company's highest expectations giving the much lower chance of failure using a BA (Meedeniya et al., 2019; Sturtevant, 2018).

Business Performance is improved by the following advantages gained through the Business analysts' performance.

- **Meet customer requirements**: To better serve the customers and work to ensure that their needs are met, the procedures must be taken seriously.
- **More efficiently achieving corporate targets:** All corporations have goals. These may be short, medium, or long-term targets. Evaluating the business processes to provide superior insights to achieve these goals is essential (Grimaldi, Diaz, Arboleda, & Fernandez, 2019).
- **Transform the business's success**: Of course, one of its main objectives is to improve performance. Method enhancement is essential to ensuring this happens.
- **Fix the root causes of the company's operation**: Through Business Process Reengineering, they can recognize and find a permanent solution to the company's processes' shortcomings.

2.9) Improved Revenue

This section is also related to Hypothesis 3, which answers RQ 1.2 and RQ 1.3.

This section is also related to Hypothesis 6, which answers RQ 1.2.

This section is also related to Hypothesis 9, which answers RQ 1.2 and RQ 1.3.

This section is also related to Hypothesis 12, which answers RQ 1.2 and RQ 1.3.

This section is related to Hypothesis 15, which answers RQ 1.2.

RESEARCH QUESTIONS

RQ 1.2: How does a Business Analyst add value to a project in which they are engaged?

RQ 1.3: How does a Business Analyst help in bridging the gap between business and IT?

HYPOTHESES

H3) Stakeholder Management has a positive impact on improved revenue.

H6) Analytical Skills have a positive impact on improved revenue.

H9) Technical Skills have a positive impact on improved revenue.

H12) Communication has a positive impact on improved revenue.

H15) Improved Revenue has a positive impact on Actual Firm Growth.

If maximizing the business's Return on Investment (ROI) is not considered seriously, Business Process Analysis cannot be taken with levity. The strategic priority for most organizations in today's economy is sales growth (Erikson, 2015). Nearly all managers are looking for ways to drive extra revenue growth. Still, research shows that over 75% of CEOs are unhappy with their success in achieving revenue goals (Naughton et al., 2020). But what is blocking their strategic market enhancement goals? The response may be several factors, such as the tension between sales and marketing departments, poor execution of sales and marketing processes, weak capacity for demand or lead generation, lack of crucial decision-making knowledge, and integrated performance measurement measures for sales and marketing. Finding a solution can be daunting to one of these problems; support could, however, be available in an unforeseen location. That location uses techniques and methods of market analysis to find a solution to the problem. The business analyst uses these techniques to find answers to issues such as these. Efficient business analysis includes gathering data from sources and analysing data to predict future developments, identifying ways to change business strategies, optimizing operations, and making smart decisions on revenue generation and the bottom line (Yu, Wu, Burns, & Carpenter, 2015).

2.10) Importance of BA

Business analysis can be characterized as a methodology used to liaise with different stakeholders to understand the needs, structure, policies, and operations of a business to find solutions that help the organization achieve its desired goals. Business Analysis plays a crucial role in any company (Van der Eijk & Rose, 2015). The most popular resolutions are reviewing business needs, proper documentation, identifying areas for process enhancement and organizational change, strategic planning, and implementing different policies that move an organization towards a better future. With business intelligence assistance, companies can develop their strategic and technological capabilities by understanding current market scenarios. Compared to rivals, this helps them identify where they are positioned in the market.

2.10.1) Big Data Analysis in BA

Today, many people believe that digital infrastructure and big data operationalization will solve supporting management decisions. Unlocking the value of big data – a massive volume of organized and unstructured knowledge that is hard to process using conventional methods – has many benefits: Diagnostic findings online, Analysis of all data sets, not samples, use of computer algorithms that can classify implicit interactions. Business analysts play a vital role in providing refined data for using Big Data (Agarwal & Dhar, 2014).

Big data is a data finding tool that works on prognostic and stream of Analysis. Data Virtualization is also one of the main processes in Big Data to integrate and distribute the raw facts (Levin, 2015).

2.10.2) Dashboards in BA

Executive decisions are the core elements that affect the organization's growth. While the business can make the right decision to reach the sky, one wrong decision can bring down the business. For IT sectors increasingly competing, budgets, company instructions, and business data are rising exponentially. A dashboard is a graphical user interface that often provides a snapshot of key performance metrics related to a particular target or business process. "Dashboard" in other use is another term for "progress report" or "log.". A business dashboard is an information management tool used to track KPIs, indicators, and other primary data points essential to a specific company, department, or operation. When using data visualizations, dashboards simplify complicated data sets to give users a sense of the current output. This device is presently used by higher than 40% of the top 2,000 establishments globally in their Business Intellect activities (Agarwal & Dhar, 2014).

2.10.3) Value of BA

Business research includes recognizing and evaluating how companies are working to achieve their full potential, which involves specifying corporate goals and determining approaches that an organization has to pursue to achieve those objectives and priorities (Kieran, 2020). Business research, which includes development and testing, plays a significant role in project execution.

Implementation involves the simulation of internal business processes and data flow, defining essential components affecting system output, and planning test.

2.10.4) BA use in the gaming industry

Organizations perceive competition in a sector as a critical topic that needs to be examined. The Analysis of a particular market starts with a general review of the factors that influence an organization. The key aim is to achieve the organizations' competitive advantage and beat competing companies. (Grimaldi, Diaz, Arboleda, & Fernandez, 2019). The key goal is to maintain the organization's competitive advantage and that it should be able to beat the competing firms. Organizations will monitor consumers' and suppliers' power in every sector because when these forces are high, it allows the suppliers to raise costs and the customers to reduce prices.

2.10.5) BA in Banking

The public does not contemplate the investment segment as a remarkably advanced business, though some brands alter insights with Analysis. Significant data aids in the fight in the inconsistency of a banking scam. One analytics with machine learning archetypal done by Quantum Black perceive the consistent $100,000 in deceitful dealings in the initial week of usage (Wong et al., 2020).

2.10.6) BA in Medicine

The medicinal trade depends on a correct tackle to pathway vital ciphers, backing with measures and style analyses. Wearable trailers blowout material to doctors and convey them if patients have undergone tablets or if they are then subsequent deed or virus running strategies. Where can they harness these tools and use them to enhance patient health at a reasonable expense, as more healthcare systems gather information electronically and as they continue to collect more innovative types of data such as human DNA? There are also some management issues, such as how to get end-users of electronic data to use it to improve healthcare quality successfully and how to handle public communication and data sharing (Dupont et al., 2017).

2.10.7) BA in Retail

Data is the key to unlocking more significant sales capacity-however retailers. Projects are overwhelmed by so much data that it can seem challenging to make sense of continuous information streams (far less money). If vendors do not predict clients' needs and offer those, their creations will probably weaken. Business analytics is not a new concept, but new technologies have emerged that enable average business users to analyse and understand the data— from finance to marketing staff and beyond (Alvarez-Rodriguez, Martin-Gamboa, & Iribarren, 2020).

2.11) Conclusion

The Exploration objective is to find the capabilities and effects of founding the Business analyst role in SMBs. Through the PRISMA literature review on 60 previous articles, it is found that some factors influence the position of Business Analysts in Organizations. According to the literature, this role is a particular skill that needs to intensely comprehend the commercial requirements and then progress an empathetic method that allows others, alleviates hazards, and upsurges competence and value of answers (Duan, 2020). BA consultants must know that their role is the technical part and serve the rest of the association to comprehend their results' sense and implication, critically counting the Study's expectations and confines. Few previous experimental indications lead to the understanding that BA can advance a firm's invention accomplishment in new creation novelty and significance, thus taking the best competitive lead. Administrations keen to exploit in Forecaster and want to use its probable influence on invention must consider data-driven philosophy and ecological skimming, decisively utilizing BA to fortify and augment data-driven culture. These experiments help a business to progress more expressive new goods using the visions produced with ecological perusing. Based on these aspects and level of success from previous industrial experiences learned through the case studies paves away for more in-depth research in creating a questionnaire and finding the role need and importance. Hence, the research presents eight influential factors and relevant hypotheses. In the next chapter, the research methodology, hypothesis, research questions, and research design are discussed.

3. RESEARCH DESIGN

3.1) Introduction

This section explains the goals of conducting this research and the main questions and hypotheses. A complete understanding of the conceptual framework and its relationship with the independent and dependent factors are figured out. The method, ethical reflections, and the boundaries of the technique were also explained. A quantitative survey method is used in this research. Initially, it was planned to conduct face to face interviews with the people so that it helps to know their emotions clearly while interviewing them. But because of this COVID situation, it is impossible to meet people directly, so the plan was changed to conduct a survey. Generally, quantitative research involves surveying a broad number (usually several hundred) of individuals, which uses a standardized questionnaire that is primarily closed-ended or forced-choice (Creswell, 2014).

3.2) Research Questions

The Selection of research design is based on a philosophical worldview. According to Creswell (2014), there are four philosophical worldviews for research. The researcher chose post-positivism for this research.

Postpositivism	Constructivism
• Determination • Reductionism • Empirical observation and measurement • Theory verification	• Understanding • Multiple participant meanings • Social and historical construction • Theory generation
Transformative	**Pragmatism**
• Political • Power and justice oriented • Collaborative • Change-oriented	• Consequences of actions • Problem-centered • Pluralistic • Real-world practice oriented

Figure 3. Philosophical worldview (Creswell 2014)

Base on a post-positivism worldview, the researcher decided to use a quantitative approach for this research.

This research examines the factors that influence the role of BA in industries. The main research question and its sub-questions are aimed at addressing this research's purpose:

RQ 1: What are the factors that influence the role of Business Analyst in Small to Medium-Scaled enterprises?

RQ 1.1: What are the benefits offered by a Business Analyst that may help in a firm's overall performance?

RQ 1.2: How does a Business Analyst add value to a project in which they are engaged?

RQ 1.3: How does a Business Analyst help in bridging the gap between business and IT?

3.3) Hypotheses

H1) Stakeholder Management has a positive impact on success factors.

H2) Stakeholder Management has a positive impact on business performance.

H3) Stakeholder Management has a positive impact on improved revenue.

H4) Analytical Skills have a positive impact on success factors.

H5) Analytical Skills have a positive impact on business performance.

H6) Analytical Skills have a positive impact on improved revenue.

H7) Technical Skills have a positive impact on success factors.

H8) Technical Skills have a positive impact on business performance.

H9) Technical Skills have a positive impact on improved revenue.

H10) Communication has a positive impact on success factors.

H11) Communication has a positive impact on business performance.

H12) Communication has a positive impact on improved revenue.

H13) Success Factors have a positive impact on Actual Firm Growth.

H14) Business Performance has a positive impact on Actual Firm Growth.

H15) Improved Revenue has a positive impact on Actual Firm Growth.

3.4) Theoretical-Framework

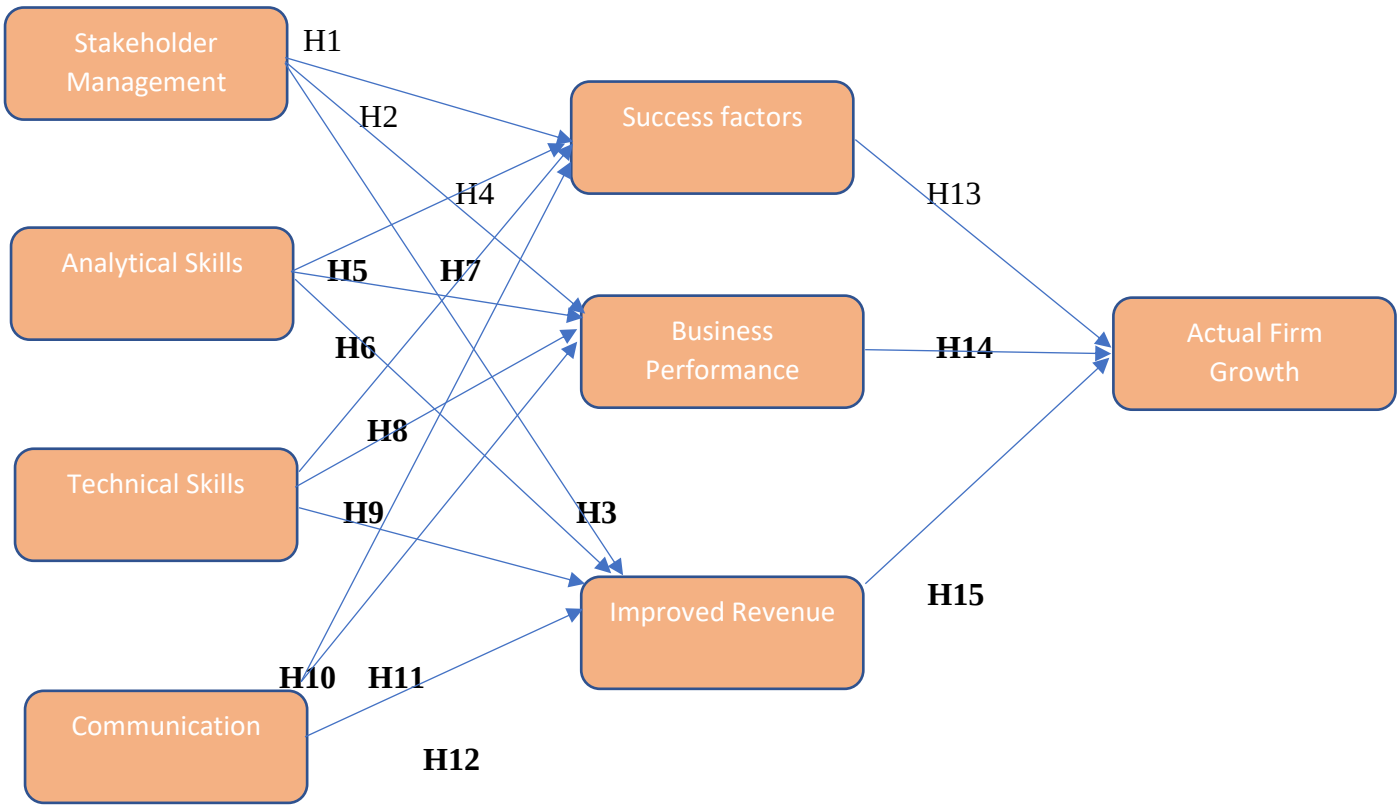


Figure 4. The Framework for Hypotheses – Business Analysis Model – BAM (Researcher's work)

3.5) Sampling Method

For any survey, sampling is essential. The method for conducting this survey will be a nonprobability method, convenience sampling. In this method, the sample is chosen from a set of easy to reach.

3.5.1) Target Count

The target population of this research is IT employees and students in India. Statistics have been gathered for identifying the total target count. Below mentioned is the original and Count of the people.

Total Number of IT employees and students in India – 1.02 million (1,200,000)

Source: https://www.ibef.org/industry/information-technology-india.aspx

Hence the population for this research is 1,200,000.

3.5.2) Sampling Unit

This research sampling unit will be one person over 18 years who has pursued IT or is currently working in an IT firm.

3.5.3) Sample Size

Three factors decide the size of a sample: heterogeneity of the population, the magnitude of acceptable error, and the confidence interval (Van der Eijk & Rose, 2015). Hence, with a population size of 1,200,000, a confidence interval of 4, and a confidence level of 95%, the sample size of 600 was determined using the sample size calculator (*https://surveysystem.com/sscalc.htm)*.

An image depicting the sample size has been given in Figure 5.

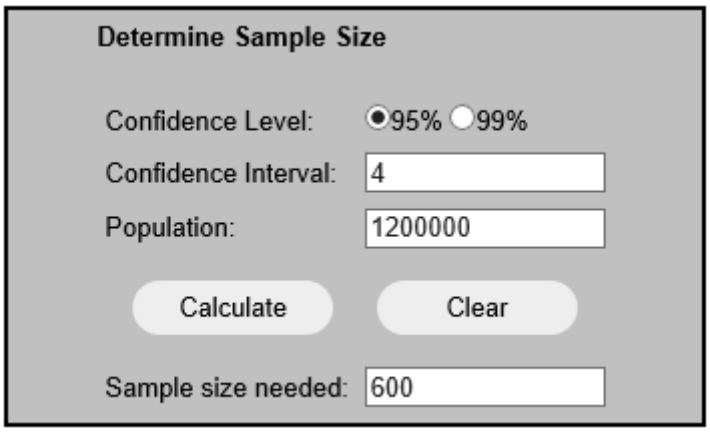


Figure 5. Sample Size Calculator (*https://surveysystem.com/sscalc.htm)*

3.5.4) Data Collection

A Survey was created according to the business analysis themes and obtained responses from this sample by sending the surveys to participants. Social media websites like WhatsApp and Facebook were used for sending the link to the participants for the online Study, and data were gathered. The survey link was open for two weeks, created on September 6, and closed on September 20. The participants were able to access the connection during this period to answer the survey questions. Based on the responses, the answers were analyzed. Tests like descriptive and chi-squared were performed to measure the answers collected from each of the survey questions. Table 2 shows the criteria to be performed on the responses received for each of the survey questions.

Table 4 Test type for Survey Questions

Survey Question No	Evaluation Category	Test Type
1	Nominal	Descriptive Analysis
2	Nominal	Descriptive Analysis
3	Nominal	Descriptive Analysis
4	Nominal	Descriptive Analysis
5	Ordinal	Chi-Square
6	Nominal	Descriptive Analysis
7	Nominal	Descriptive Analysis
8	Nominal	Descriptive Analysis
9	Nominal	Descriptive Analysis
10	Ordinal	Chi-Square
11	Nominal	Descriptive Analysis
12	Ordinal	Chi-Square
13	Nominal	Descriptive Analysis
14	Nominal	Descriptive Analysis
15	Nominal	Descriptive Analysis
16	Nominal	Chi-Square
17	Nominal	Descriptive Analysis
18	Nominal	Descriptive Analysis
19	Nominal	Descriptive Analysis
20	Nominal	Descriptive Analysis

3.5.5) Primary Data Description

A total of 948 participants answered the survey. Data were collected during the two weeks, created on September 6, and closed on September 20 through the Qualtrics Survey Tool. In this survey, 948 participants opened the survey questionnaire, and 623 participants finished all questions. Hence, 623 surveys were considered for final analysis. The average time to complete a survey was 4 minutes. 91 percent of participants finished their survey responses via a mobile device. Others used computers.

4. DATA ANALYSIS

To gain a systematic understanding of the online survey responses, the researcher followed the data analysis steps shown in Figure 6.

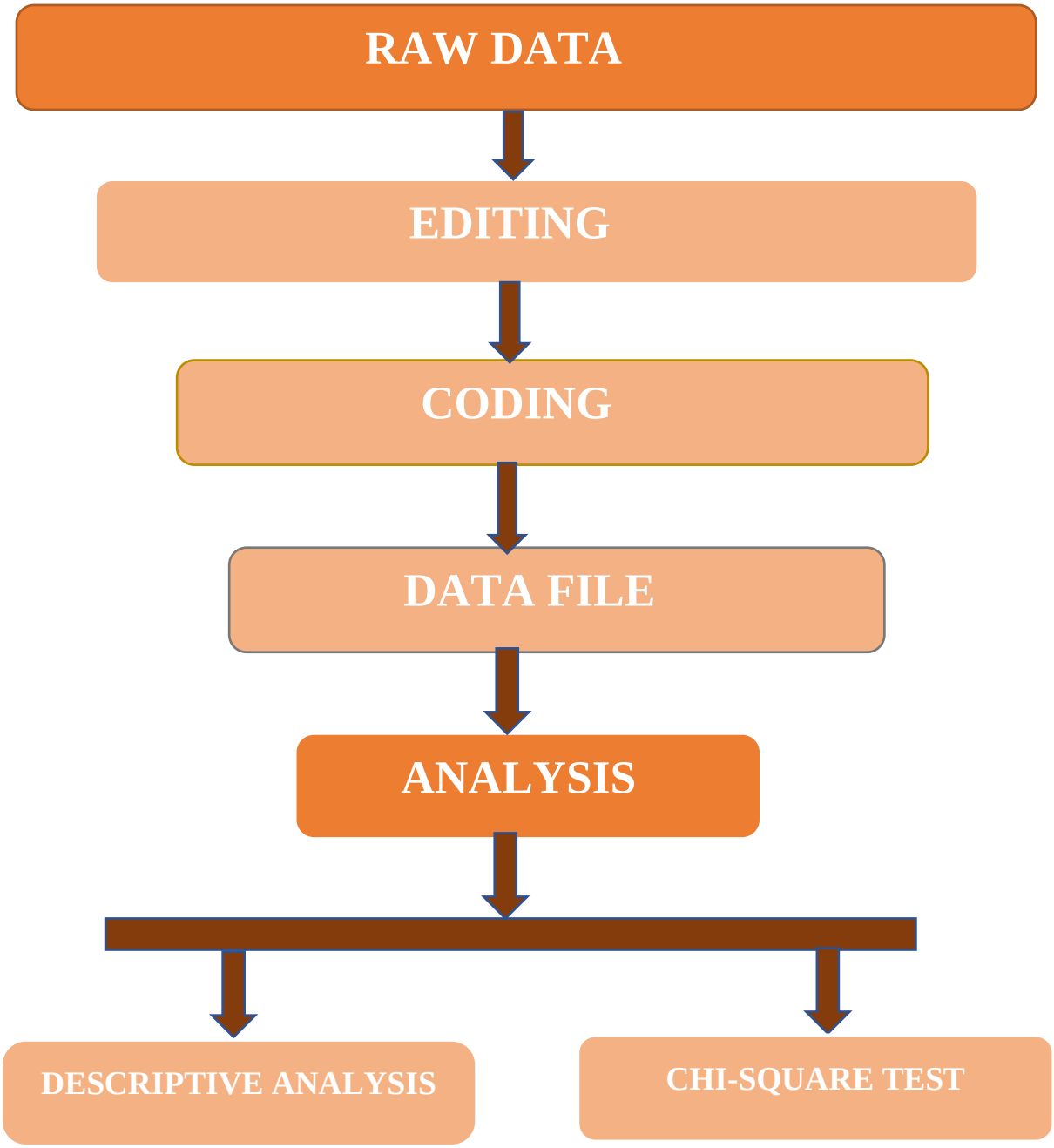


Figure 6. Overview of Analysis Method (Zikmund et al. 2014)

4.1) Raw Data

The survey responses were feed into the survey tool Qualtrics in SPSS format. As all 20 survey questions were mandatory, all 623 responses were valid.

4.2) Editing

Editing data was done to remove unnecessary information. Some responses were incomplete, and some responses were from participants who were under 18. Totally 325 responses were deleted during the editing process.

4.3) Coding

Coding was the third step to be done to make the data more software friendly. The researcher input the data into SPSS software. The researcher used numeric codes that facilitated clarity when the analysed data was presented in the variable view. The data coding process is given below in Table 5:

Table 5: Data Coding

Question Number	Field	Responses	Codes
Q1	Over 18	Yes	1
		No	2
Q2	Age Group	18-24	1
		25-34	2
		35-44	3
		45-54	4
		55-64	5
		65+	6
Q3	Gender	Male	1
		Female	2
		Other	3
		Do not want to state	4
Q4	Designation	Developer	1
		Tester	2
		Analyst	3
		Manager	4
		Administrator	5
		Help Desk	6
		Others	7
Q5	Opportunities in Market	Definitely yes	1
		Probably yes	2
		Might or might not	3
		Probably not	4
		Not	5

Q6	Primary Skills	Communication	1
		Data Analysis	2
		Writing Skill	3
		Stakeholder Mgmt	4
		Financial Planning	5
		Technical Knowledge	6
		Problem Solving	7
		Decision Making	8
		All the above	9
		None	10
		Others	11
Q7	Goals of BA	Figure out sales	1
		Directing the growth	2
		Communicating new product progress	3
		All the above	4
		Others	5
Q8	Technical Skills	Align IS with operations	1
		Internal IT support	2
		Webservices and customer support	3
		Develop and tests	4
		All the above	5
		Others	6
Q9	Benefits by BA	Better Communication	1
		Recruitment Process	2
		Collaboration with resources	3
		Payroll	4
		Cost-efficient	5
		Time Efficient	6
		All of the above	7
		Others	8
Q10	Performance Rate as BA	Far above average	1
		Moderately above	2
		Slightly above	3
		Average	4
		Slightly below	5
		Moderately below	6
		Far below	7
Q11	Dependent Task Results	Delivery of project	1
		Stakeholder relationship	2
		Quality	3
		All the above	4
		Others	5
Q12	Success Factor Dependency on BA	Much higher	1
		Moderately higher	2
		Slightly higher	3

		About the same	4
		Slightly lower	5
		Moderately lower	6
		Much lower	7
Q13	Future career path for BA	Business Analytics	1
		Business Transformation	2
		Strategy Management	3
		Product Management	4
		Others	5
Q14	Role after 5years	Manager	1
		Team lead	2
		BA	3
		Unchanged	4
		Others	5
Q15	Main Services by BA	Requirements	1
		Collaboration	2
		Planning	3
		Operations	4
		Roadmap	5
		Organizational Change	6
		Project Mgmt	7
		Cost Mgmt	8
		Others	9
Q16	Professional tools ensure good quality	Yes	1
		No	2
Q17	Challenge faced by BA	Misconceptions	1
		Conflicts	2
		Undocumented process	3
		Changing needs	4
		High-cost tools	5
		Others	6
Q18	BA competency in an organization	Within Technology	1
		Business unit	2
		External service provider	3
		Separate unit	4
		Others	5
Q19	Methodology	Waterfall	1
		Agile	2
		Hybrid	3
		Other	4
Q20	Personal Opinion	Gaining Recognition	1
		Good Value	2
		Reduce risks	3

		Well understood in the market	4
		Outcomes depend on the quality	5

4.4) Descriptive Analysis

- **Screening Question**

A screening question was first provided to obtain consent from the participants. Only those who gave permission were taken to the next step of the survey.

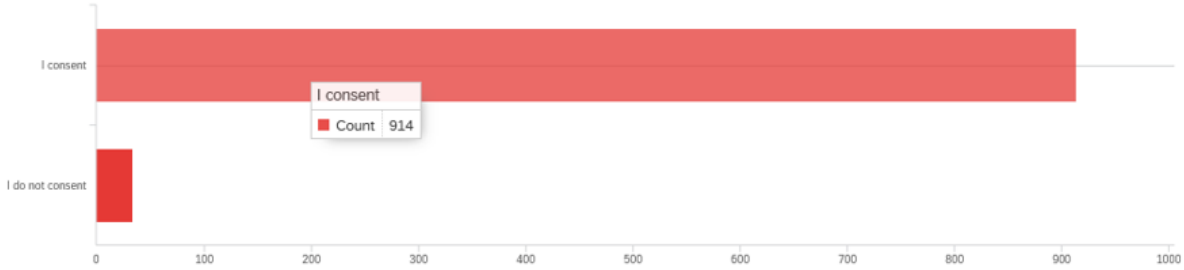


Figure 7. Screening Question for Consent Form

948 responses were received for this online survey.

From these 948 participants, consent was given by 914 people, and 34 participants selected 'do not consent,' which is given in Figure 7.

Due to some technical issues, 254 participants could not participate in the survey even after giving consent. So, excluding those 254, and some under 18, and incomplete responses (which is clearly explained in the next question), only 623 responses were analysed.

Q1) Are you over the age of 18 years?

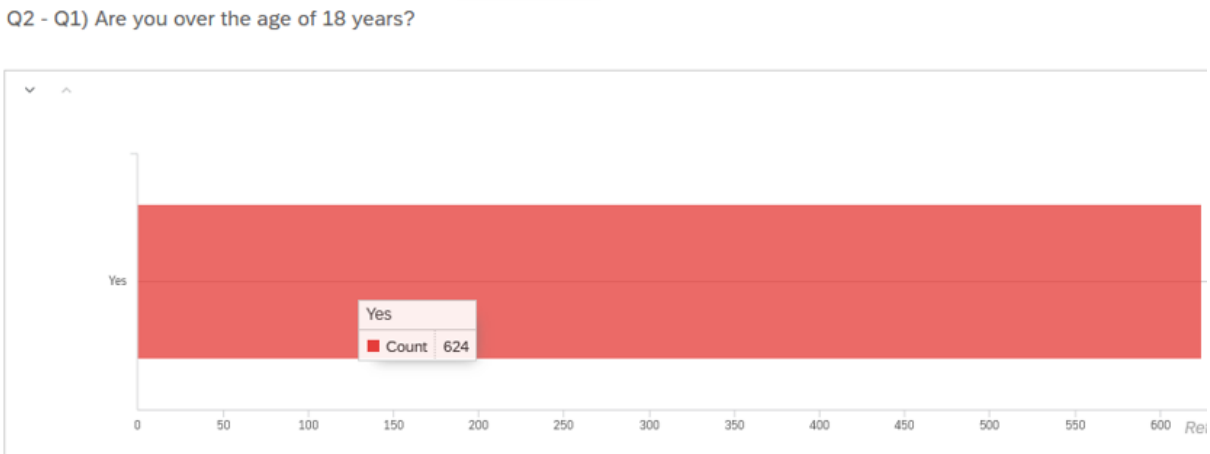


Figure 8. Question 1 showing the Number of Participants above age 18.

Question 1 was to check whether the participants were above 18 years or not. Among 660 participants, only 624 were above 18, and 36 were under 18. So, the responses of age above 18 were only taken into the analysis, which is a total of 624. Figure 8 clearly shows the count of participants over 18years. Among 624 responses, 1 participant has not attended all the questions, which is an incomplete survey, so that response was not analyzed. Hence only 623 responses were finally taken into analysis.

Q2) Which age group do you fit in?

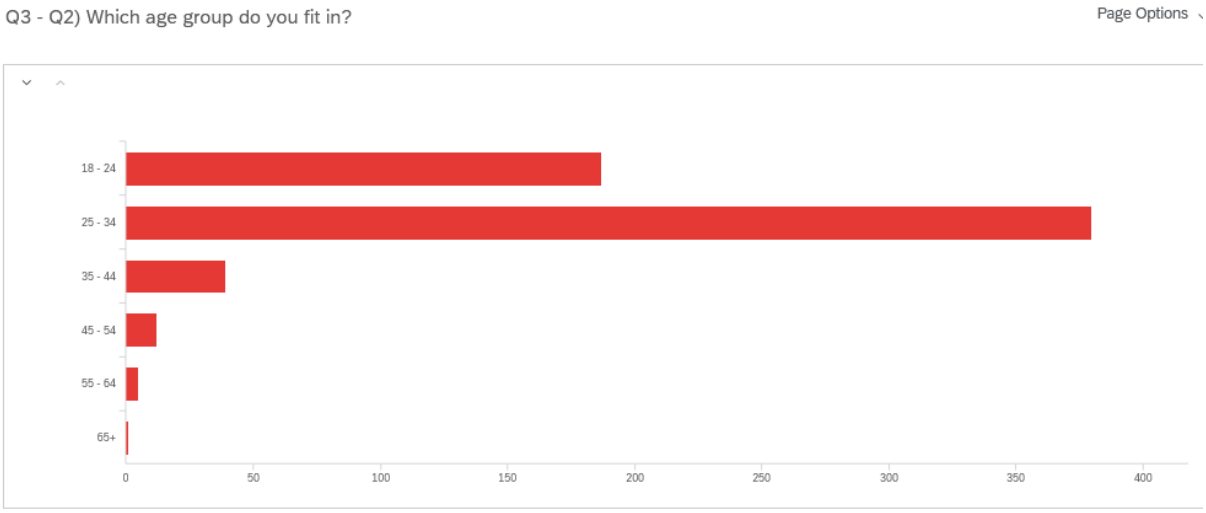


Figure 9. Question 2 showing the participation of different age groups.

#	Field	Choice Count	
2	18 - 24	29.97%	187
3	25 - 34	60.90%	380
4	35 - 44	6.25%	39
5	45 - 54	1.92%	12
6	55 - 64	0.80%	5
7	65+	0.16%	1
			624

Figure 10. Number of participants in every age group

Question 2 was to check which age group does each participant belongs to. Figure 9 shows the options given, and Figure 10 shows the percentage and count of every choice. Out of 623 valid responses, there were 380 participants in the 25-34 age group with 60.90%, followed by 187 participants in the 18-24 group with 18.27%. 39 participants are from the age group 35-44 group with 6.25% and 12 from 45 to 54 group with 1.92%. Only 5 people were from the 55-64 age group with 0.80%. One participant with 0.16% was 65+ who did not continue the rest of the survey questions. As a result, only 623 responses were considered further.

Q3) What is your gender?

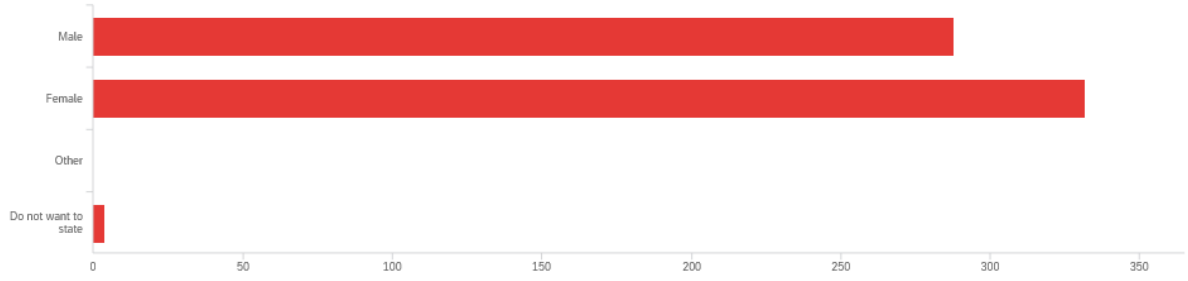


Figure 11. Question 3 gender

#	Field	Choice Count	
1	Male	46.15%	288
2	Female	53.21%	332
3	Other	0.00%	0
4	Do not want to state	0.64%	4
			624

Figure 52. Number of Participants by Gender

Question 3 was to know the percentage of each gender participation. Among 624, there were 332 female participants with 53.21% and 288 male participants with 46.15%. 4 people with 0.64% did not want to reveal their gender. Figure 11 shows the options given, and figure 12 shows the count. As explained in previous question 1 participant has not attended all the questions, so that response was not analyzed. Hence it is removed from the data.

Q4) What is your designation in your organization?

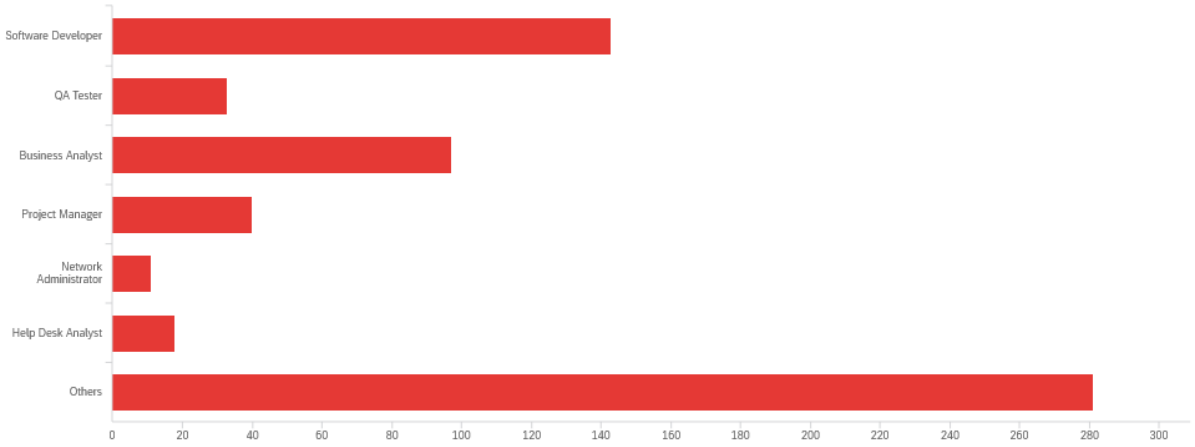


Figure 63. Question 4 showing the participants' designations in their respective companies.

Field		Choice Count
Software Developer	22.95%	143
QA Tester	5.30%	33
Business Analyst	15.57%	97
Project Manager	6.42%	40
Network Administrator	1.77%	11
Help Desk Analyst	2.89%	18
Others	45.10%	281
		623

Figure 74. The number of participants by their designation.

The survey was focused on the IT employees in India and with few students. So, Question 4 was to understand what role the participant plays in their respective organizations. Figure 13 shows the options given, and Figure 14 shows the percentage and count of every choice. Among 623 participants, 143 were software developers with 22.95%, and 97 were Business analysts with 15.57%, followed by 33 QA testers

with 5.30%. 40 Project Managers, which is about 6.42%, have attended the survey and network administrators were 11 with 1.77%, followed by 18 help desk analysts with 2.89%.

Among 623, 281 participants held other roles in their organization, as given below. Some were students, whereas some were involved in Business Development and sales. Product Managers, Data Analyst, and Financial Consultants also participated in the survey.

Figure 85. Participants with other designations that are not given in the options.

Q5) Do you find more opportunities for Business Analyst Role in market?

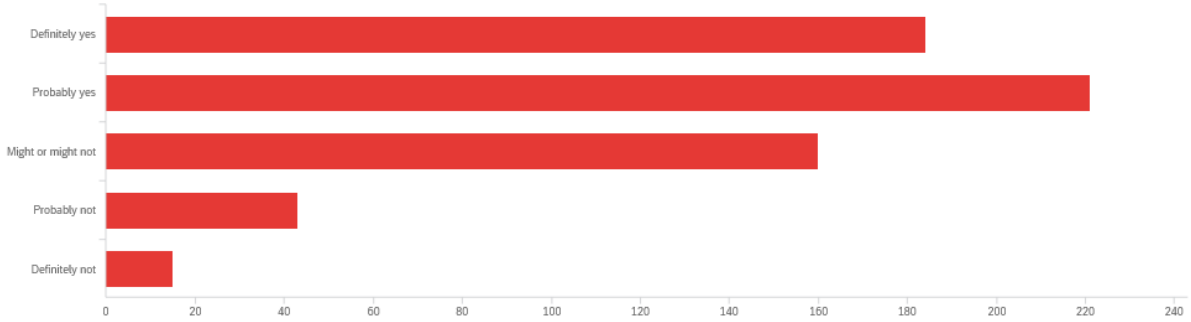


Figure 16. Question 5 showing the range of opportunities that exist in the market for BA.

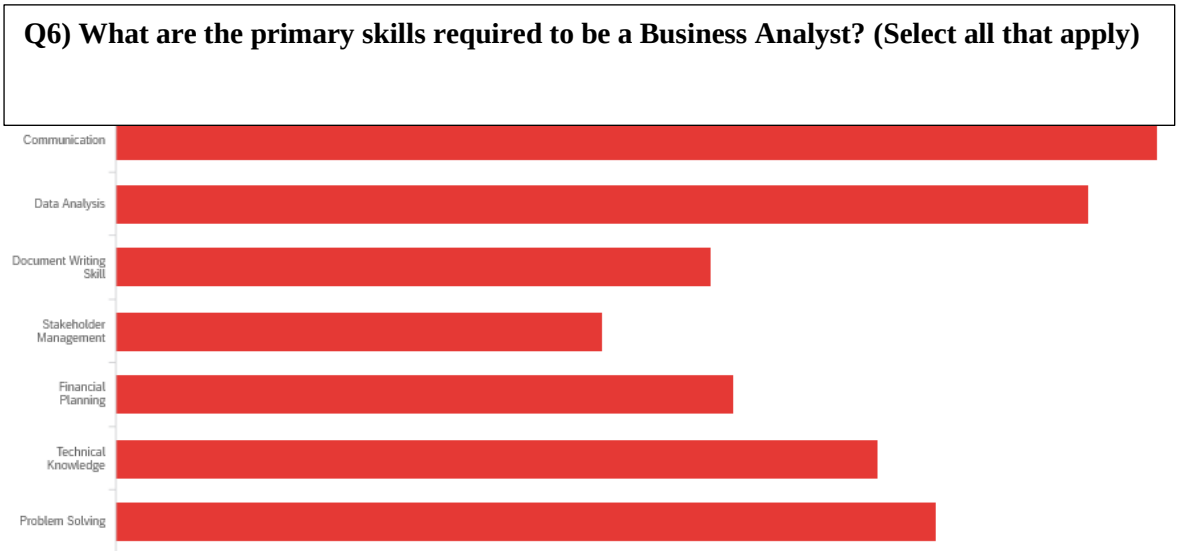
#	Field		Choice Count
1	Definitely yes	29.53%	184
2	Probably yes	35.47%	221
3	Might or might not	25.68%	160
4	Probably not	6.90%	43
5	Definitely not	2.41%	15
			623

Figure 97. Individual Count for different ranges of opportunities.

Question 5 was focusing on the opportunities of the BA role. A measurement criterion was based on the options ‘definitely yes’, ‘probably yes,’ ‘might or might not,’ ‘probably not,’ and ‘not.’ Figure 16 shows the options given. Figure 17 shows the percentage and count of every choice.

As per the survey, the Business Analyst's role is having more opportunities in the industrial market as 221 participants among 623, which is about 35.47% have selected ‘probably yes,’ and 184 have chosen ‘definitely yes’ with 29.53%.

160 participants with 25.68% who were not sure have selected ‘might or might not.’ 43 people, with 6.90%, have said ‘probably not,’ and 15 with 2.41%, have firmly said ‘not.’



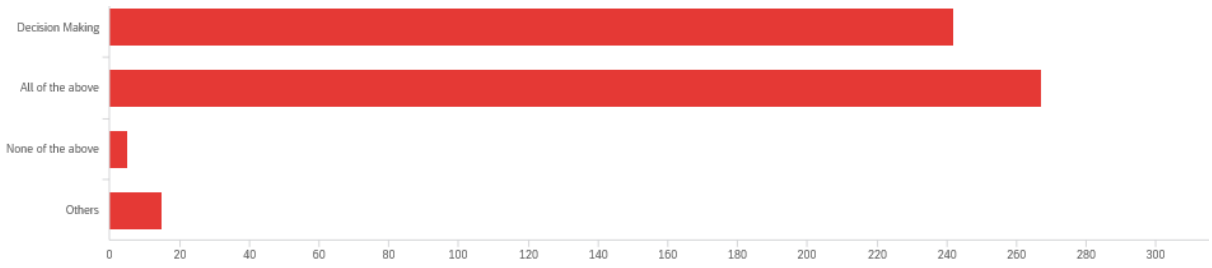


Figure 108. Question 6 for the Selection of primary skills and their ranges

Question 6 was to understand the primary skills every business analyst should possess. The participants were asked about the primary skills required to be a business analyst. Figure 18 shows that Communication, Data Analysis, Document Writing skills, Stakeholder Management, Financial Planning, Technical knowledge, Problem Solving, and Decision Making are the options. The participants can choose one or more options from the given. Based on the above results, it is clearly understood that Communication is the option selected by a majority of the participants.

Field	Choice Count	
Communication	14.44%	287
Data Analysis	13.48%	268
Document Writing Skill	8.25%	164
Stakeholder Management	6.74%	134
Financial Planning	8.55%	170
Technical Knowledge	10.56%	210
Problem Solving	11.37%	226
Decision Making	12.17%	242
All of the above	13.43%	267
None of the above	0.25%	5
Others	0.75%	15

Figure 1911. Several choices were made for each primary skill.

Figure 19 gives the numerical statistics of the options. Communication leads with the highest count of 287 with 14.44%, followed by Data Analysis selected by 268 people with 13.48%. The next leading is the decision-making skill chosen by 242 people with 12.17% and problem-solving by 226 people with 11.36%. 210 participants, with 10.56%, have chosen Technical Knowledge as the primary skill, and 170 with 8.55% chosen financial planning. 164 people with 8.25% selected document Writing Skills. Stakeholder Management skills

have been chosen by the least number of people with the count 134 with 6.74%. 267 people with 13.43% have treated all the options as equal, and 5 people, which is about 0.25%, felt that none of the given skills are primary for a BA.

Q7) What are the goals of the Business Analyst? (One or more apply)

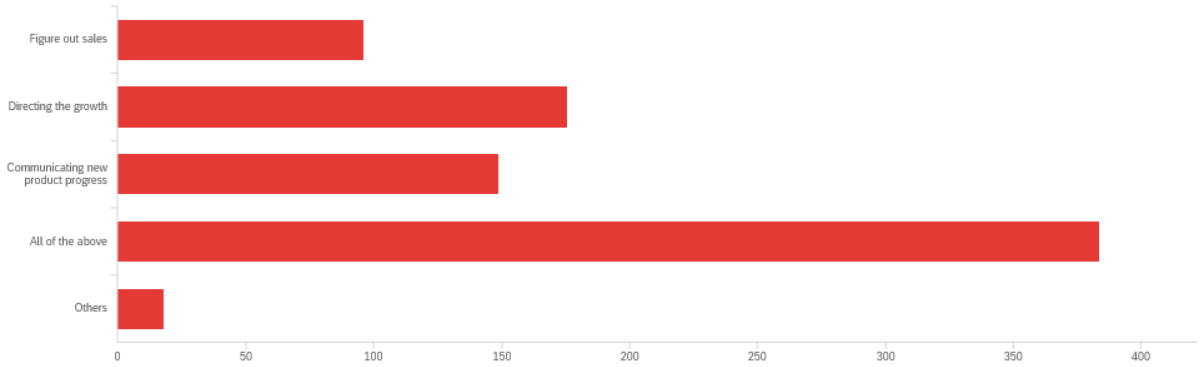


Figure 120. Question 7 Frequency of participants' concerns about the goals of BA.

Field	Choice Count	
Figure out sales	11.66%	96
Directing the growth	21.39%	176
Communicating new product progress	18.10%	149
All of the above	46.66%	384
Others	2.19%	18

Figure 131. Showing Number of participants for each goal selected

Question 7 was to identify the goals of the Business Analyst. Three options were given to the participants: communicating new product progress, directing growth, and figuring out sales. Figure 20 shows the options provided, and Figure 21 shows the percentage and count of every choice. Among these three options, directing growth was considered the primary goal by most people (176), which is 21.39%, followed by communicating new product progress (149), which is 18.10%. Only 96 people, which is about 11.66%, have chosen to figure out sales as the primary goal. Mainly 384 participants with 46.66% have considered all three options as the primary goal. 18 people with 2.19% have selected OTHERS and shared their opinions, like Formulating a product's design and requirements and risk handling as BA's goals.

Q8) What are the technical skills a BA requires?

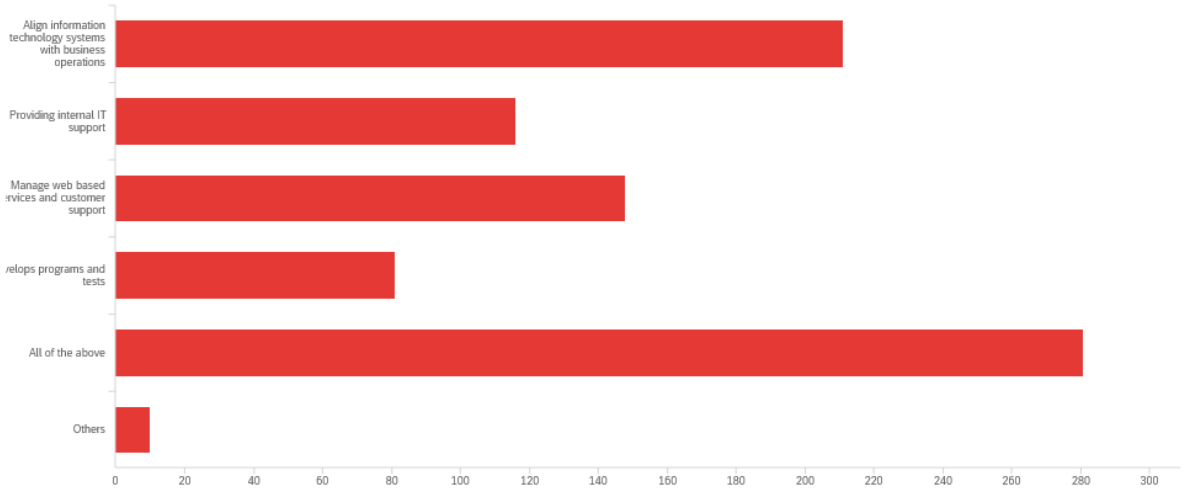


Figure 142. Frequency of participants concern about each technical skill

Field	Choice Count	
Align information technology systems with business operations	24.91%	211
Providing internal IT support	13.70%	116
Manage web based services and customer support	17.47%	148
Develops programs and tests	9.56%	81
All of the above	33.18%	281
Others	1.18%	10

Figure 153. Showing Number of participants for each technical skill selected

Question 8 was about Technical Skills. Four main categories were given as options, such as Align information Technology Systems with business operations, providing internal IT support, managing web-based services and customer support, and developing programs and tests. Figure 22 shows the options given, and Figure 23 shows the percentage and count of every choice. Among the given, most people with count 211 and 24.91% have selected option 1 as the essential skill required for a BA, followed by option 3 chosen by 148 people with 17.47% and option 2 by 116 people with 13.70%. Option 4 was selected by the least number of people with 9.56%, which was just 81. 281 participants, which is 33.18%, have considered all the given options as equally important technical skills by selecting option 5, and 10 people with 1.18% believed none of them as required.

Table 6 Technical Skills and Corresponding Codes

Q8	Technical Skills	Align IS with operations	1
		Internal IT support	2
		Webservices and customer support	3
		Develop and tests	4
		All the above	5
		Others	6

Q9) What are the benefits offered by business analysis, if any?

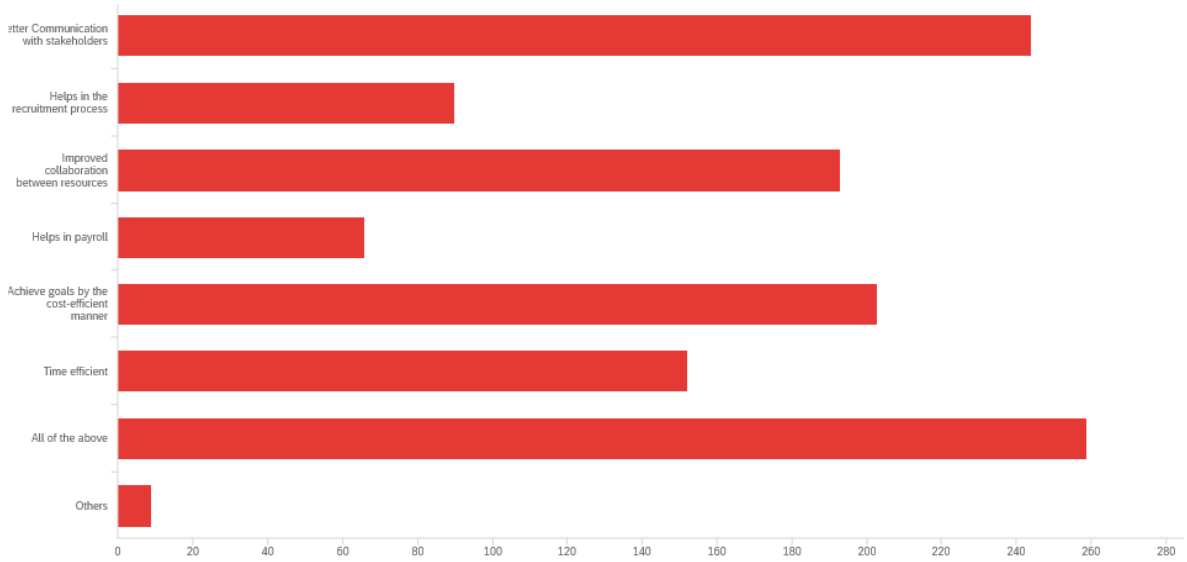


Figure 164. Frequency of participants concern for the benefits offered by BA

Field	Choice Count	
Better Communication with stakeholders	20.07%	244
Helps in the recruitment process	7.40%	90
Improved collaboration between resources	15.87%	193
Helps in payroll	5.43%	66
Achieve goals by the cost-efficient manner	16.69%	203
Time efficient	12.50%	152
All of the above	21.30%	259
Others	0.74%	9

Figure 175. Showing Number of participants for each benefit selected

Question 9 was about the benefits offered by the business analysis, and 6 main options were provided in the survey, such as better communication with stakeholders, helps in the recruitment process, improved collaboration helps in payroll, cost-efficient, and time-efficient. Figure 24 shows the options given, and Figure 25 shows the percentage and count of every choice. Among the given, most people with 259 as count with 21.30% have selected option 7, which states that all the given options are considered the benefits, whereas 244 participants with 20.07% have chosen option 1 as the main advantage 203 with 16.69% have selected option 5. Option 3 was selected by 193 people with 15.87%, followed by 152 selecting option 6 with 12.50%. Option 2 was chosen by 90 with 7.40%, and finally, option 4 with 66 with 5.43%. Helping in payroll is not the job of a BA; hence option 4 will be rejected. Also, it is the least selected option. A separate department in every organization handles payroll handling. Among 623 participants, 9 with 0.74% have selected option 8 since none of the given options are considered as benefits of BA.

Table 7:Benefits by BA and Corresponding Codes

Q9	Benefits by BA	Better Communication	1
		Recruitment Process	2
		Collaboration with resources	3
		Payroll	4
		Cost efficient	5
		Time Efficient	6
		All of the above	7
		Others	8

Q10) How would you rate your performance as a Business Analyst?

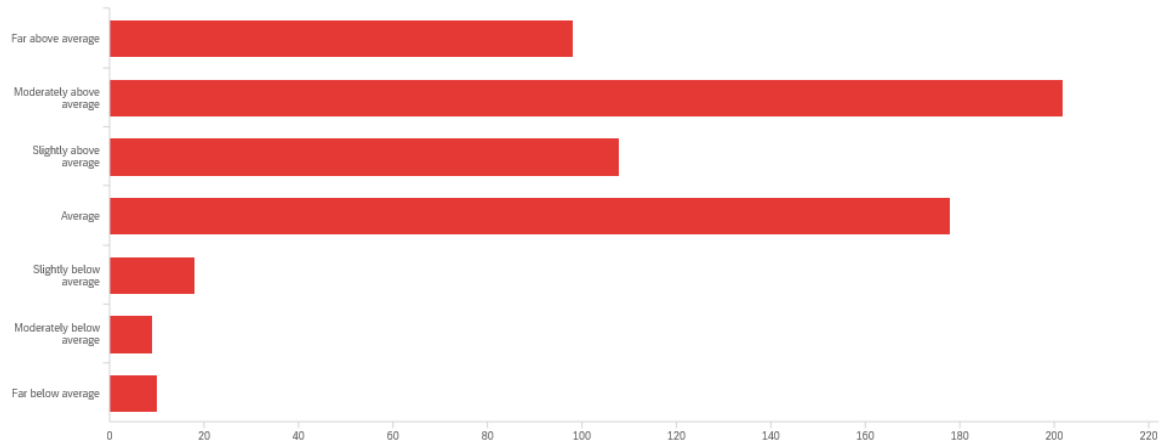


Figure 186. Performance rate as a business analyst

Field		Choice Count
Far above average	15.73%	98
Moderately above average	32.42%	202
Slightly above average	17.34%	108
Average	28.57%	178
Slightly below average	2.89%	18
Moderately below average	1.44%	9
Far below average	1.61%	10
		623

Showing rows 1 - 8 of 8

Figure 197. Showing Number of participants for each performance rate selected

Q10 is a Likert scale question for understanding their performance level as a Business Analyst. Figure 26 shows the options given, and Figure 27 shows the percentage and count of every option chosen. Among 623 participants, 202 people with 32.42% have valued their performance as 'moderately above average,' and 178 with 28.57% have considered them as 'average'.108 with 17.34% have selected 'slightly above average,' and 98 with 15.73% considered their performance as 'far above average.' 'Slightly below average' was selected by 18 with 2.89%, followed by 10 people with 1.61% choosing 'far below average.' Only 9 people with 1.44% are 'moderately below average.'

Q11) What are the task results dependent on a business analyst?

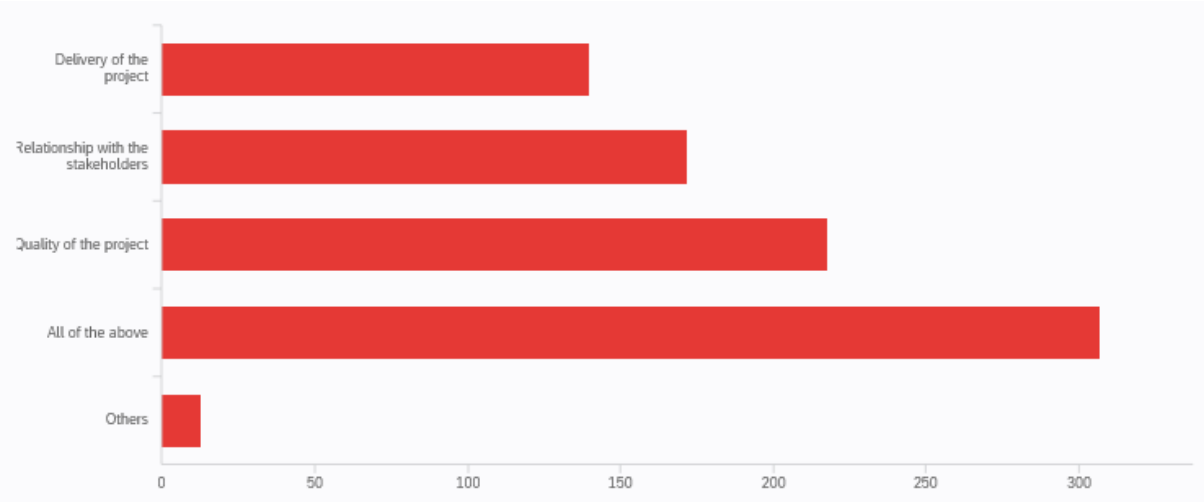


Figure 208. Frequency of participants concern about the dependent task results on a BA

Field	Choice Count	
Delivery of the project	16.47%	140
Relationship with the stakeholders	20.24%	172
Quality of the project	25.65%	218
All of the above	36.12%	307
Others	1.53%	13
		850

Figure 2921. Showing Number of participants for task result selected

Every role in a company will have its benefits. Question 11 was to focus on the tasks dependent on a business analyst in an organization. Three main options were considered: the project's delivery, relationship with the stakeholders, and the project's quality. Figure 28 shows the options given, and Figure 29 shows the percentage and count of every option chosen. Participants were allowed to choose more than one option. As a result, most people selected all of the above options since they considered all three options are dependent on a BA. 218 with 25.65% choose the project's quality, and 172 with 20.24% fixed relationships with the stakeholders. 140 people, with 16.47% select the project's delivery, and 13 others with 1.53%, were chosen as they stated that none of the given tasks are dependent on a BA.

Q12) How much does a success factor depend on a Business Analyst?

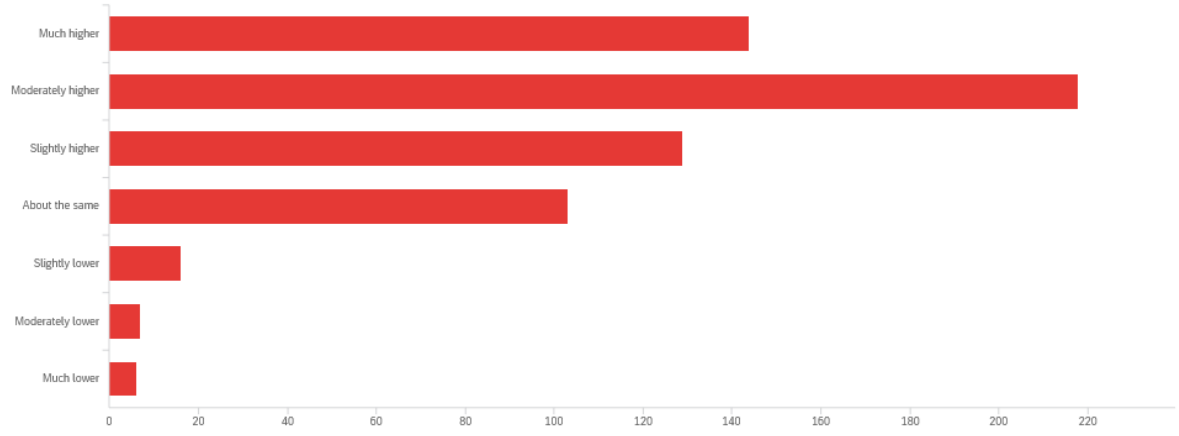


Figure 220. Frequency of participants concern about the success factor dependency on a BA

Field	Choice Count	
Much higher	23.11%	144
Moderately higher	34.99%	218
Slightly higher	20.71%	129
About the same	16.53%	103
Slightly lower	2.57%	16
Moderately lower	1.12%	7
Much lower	0.96%	6
		623

Figure 231. Showing Number of participants for the success factor range

Question 12 is a Likert Scale Question that focuses on how much a success factor depends on a Business Analyst, and 6 options were given, such as 'Much higher, Moderately higher, Slightly higher, About the same, Slightly lower, Moderately lower and Much lower.' Figure 30 shows the options given, and Figure 31 shows the percentage and count of every option chosen. Among the given majority have chosen 'moderately higher' with count 218 with 34.99% followed by 144 with 23.11% determined 'much higher.' 129 with 20.71% have said that the dependency of success factor on a Business analyst is 'slightly higher' and 103 with 16.53% selected 'about the same' which means there is no role of a BA in success factor of a project.16 with 2.57% have considered 'slightly lower' and 7 with 1.12% as 'moderately lower.'6 with 0.96% people have said that dependency on a BA is 'much lower.'

Q13) What future career path do you foresee for Business Analysts?

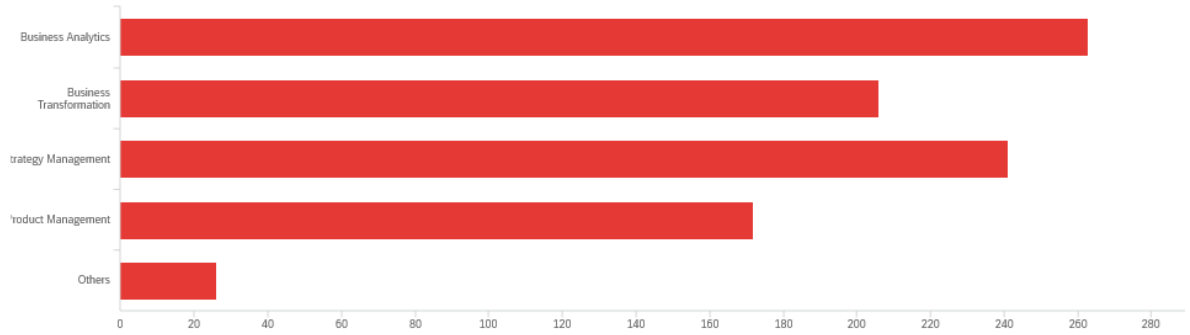


Figure 242. Frequency of participants for each future career path selected

Field	Choice Count	
Business Analytics	28.96%	263
Business Transformation	22.69%	206
Strategy Management	26.54%	241
Product Management	18.94%	172
Others	2.86%	26

Figure 253. Showing Number of participants for each success factor selected

Question 13 was asked about their idea on the future career path for a Business Analyst, and 4 main options were given as Business Analytics, Business Transformation, Strategy Management, and Product Management. Figure 32 shows the options given, and Figure 33 shows the percentage and count of every option chosen. The majority have selected Business Analytics with 263 with 28.96%, and 241 with 26.54% have said strategic management. Business Transformation was chosen by 206 participants, with 22.69% and 172, with 18.94% selected product management. 26 participants, with 2.86%, chosen none of these options, selected the OTHER option, and shared their thoughts.

Q14) In 5 years' time what role do you see yourself in?

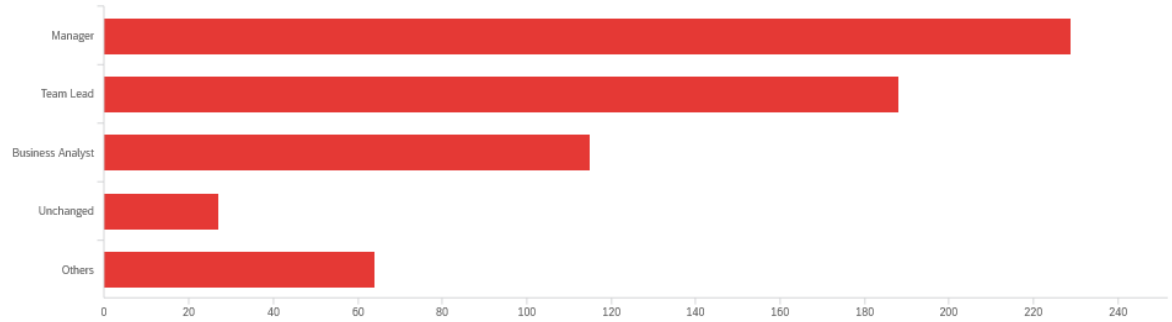


Figure 264. Frequency of participants concern about their future role

Field	Choice Count	
Manager	36.76%	229
Team Lead	30.18%	188
Business Analyst	18.46%	115
Unchanged	4.33%	27
Others	10.27%	64

Figure 275. Showing Number of participants for each future goal selected

The next question, 14, is similar to the previous question, but it aims to analyse the participants' business analysis aspirants. As the survey is conducted with the IT employees and students, the problem was understanding their role in the next 5 years. Figure 34 shows the options given, and Figure 35 shows the percentage and count of every option chosen. Four different options, such as Manager, Team Lead, Business Analyst, and Unchanged, are given. 229 people with 36.76% selected Manager and 188 with 30.18% have chosen Team Lead. 115 with 18.46% of the 623 participants have said Business Analyst and 27 with 4.33% said there would be no change in their role after 5 years. 64 participants, which is 10.27%, have selected the OTHER option and given their own choices like program manager, product head, etc.

Q15) What do you consider to be the main services offered by a Business Analyst?

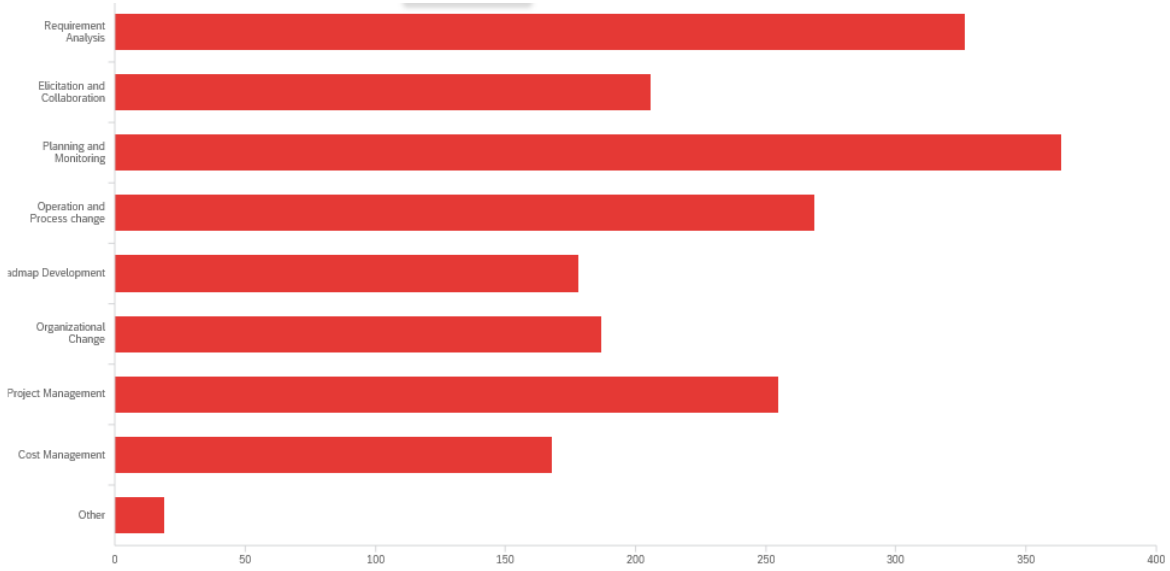


Figure 286. Frequency of participants concern about the main services offered

Field	Choice Count	
Requirement Analysis	16.57%	327
Elicitation and Collaboration	10.44%	206
Planning and Monitoring	18.45%	364
Operation and Process change	13.63%	269
Roadmap Development	9.02%	178
Organizational Change	9.48%	187
Project Management	12.92%	255
Cost Management	8.51%	168
Other	0.96%	19

Figure 297. Showing Number of participants for each service selected

Question 15 was to analyze the services offered by a BA, and 8 different options, displayed in Figure 36, were given. Figure 37 shows the count and percentage of each option chosen by the participants. Participants were allowed to select more than one option. Among the given highest number of people with the count, 364 and 18.45% have chosen planning and monitoring as the leading service offered by BA and 327 with 16.57% selected requirement analysis.269 with 13.63% selected Operations and process change, whereas 255 people with 12.97% determined project management. 206 people, which is 10.44%, chose elicitation and collaboration, and 187 people, with 9.48%, picked organizational change.178 with 9.02% have set roadmap development, and 168 with 8.51% selected cost management and 19 participants, which is 0.96% have chosen neither of the options and chosen OTHER and shared their own opinion.

Q16) In your personal opinion does the use of professional requirements management tools helps to ensure good quality in a project?

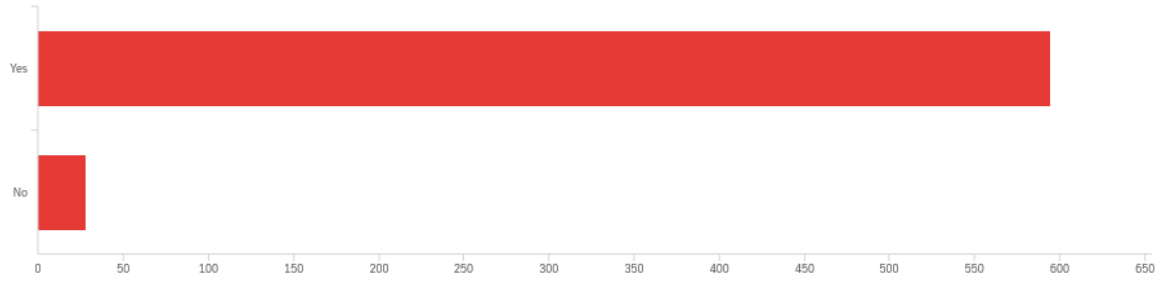
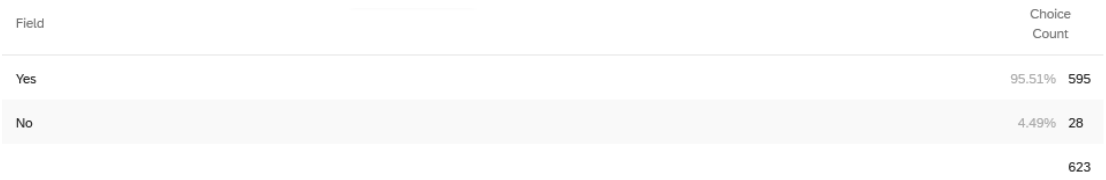


Figure 308. Frequency of participants concern about the usage of professional tools



Field		Choice Count
Yes	95.51%	595
No	4.49%	28
		623

Figure 3931. Showing Number of participants for each option selected

In this current world of technology, every organization uses different tools for running its project. Question 16 was to understand the participant's thoughts on using these management tools to ensure good quality or not in a project. The answers were based on a Two-point scale of YES or NO. Figure 38 shows the options given, and Figure 39 shows the percentage and count of every option chosen. Among 623 participants, 595, which is 95.51%, have selected 'YES' and 28, which is 4.49%, assigned 'NO.' Hence, most of the population encourages the use of management tools in projects.

Q17) What is the biggest challenge faced by a Business Analyst?

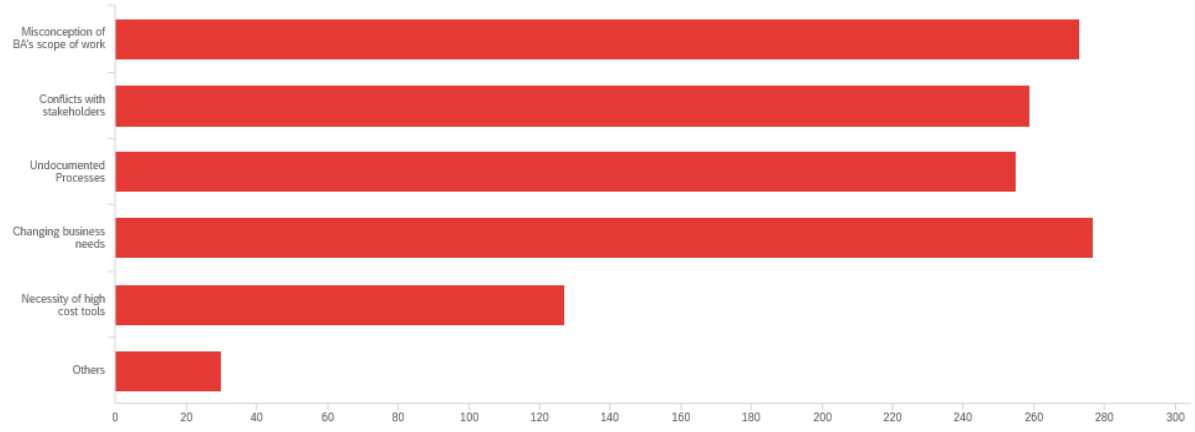


Figure 320. Frequency of participants concern about the challenges faced by BA

Field	Choice Count
Misconception of BA's scope of work	22.36% 273
Conflicts with stakeholders	21.21% 259
Undocumented Processes	20.88% 255
Changing business needs	22.69% 277
Necessity of high cost tools	10.40% 127
Others	2.46% 30

Figure 331. Showing Number of participants for each challenge selected

Question 17 was to understand the most significant challenge faced by a business analyst, and 5 main options are given in figure 40. The given options are Misconception, Conflicts, Undocumented processes, Changing needs, and high cost. Figure 41 is shown entirely with the count and percentage of selection by the participants. Among the given, 277 with 22.69% have selected changing business needs, and 273, which is 22.36%, have considered Misconception of BA's scope of work as the biggest challenge of a BA.259 with 21.21% have considered conflicts with stakeholders as a challenge and 255 people which is 20.88% selected undocumented processes. 127 with 10.40% have felt the high-cost tool's necessity as the most significant challenge.30 with 2.46% have specified OTHER and shared their own opinion about the challenges.

Q18 - Within your organization where does the business analysis competency sit?

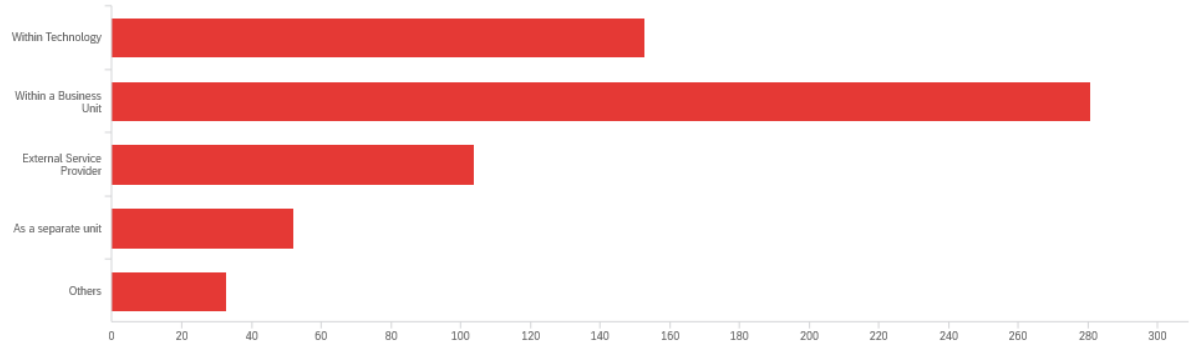


Figure 342. Frequency of participants for each competency selected

Field	Choice Count
Within Technology	24.56% 153
Within a Business Unit	45.10% 281
External Service Provider	16.69% 104
As a separate unit	8.35% 52
Others	5.30% 33

Figure 353. Showing Number of participants for each competency

Figure 42 shows the options provided, and Figure 43 gives the count and ratio of the participants' choices. Question 18 is to understand where the business analyst role fits in an organization. Opportunities are within technology, within the business unit, external service provider, a separate unit, or Other. Among the given, 281 participants with 45.10% have chosen within a business unit, and 153 with 24.56% selected within technology. 104, with 16.69% have chosen the external service provider, and 52 with 8.35% said as a separate unit. 33 with 5.30% have chosen OTHER.

Q19) Which methodology does your project applies the most?

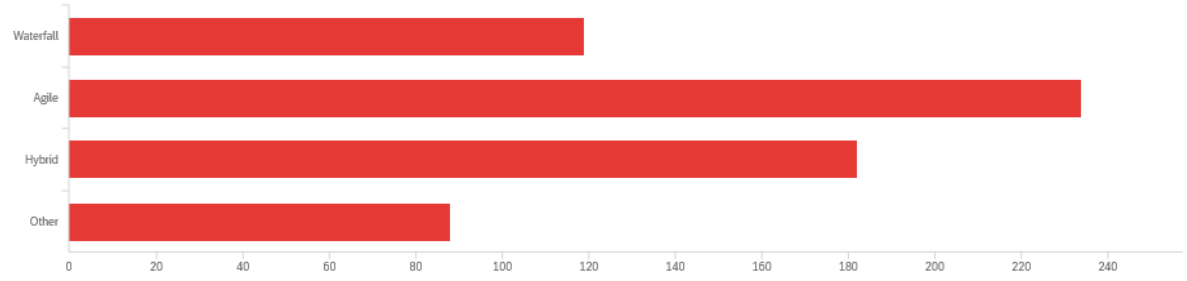


Figure 364. Frequency of participants for each methodology selected

Field	Choice Count
Waterfall	19.10% 119
Agile	37.56% 234
Hybrid	29.21% 182
Other	14.13% 88

Figure 375. Showing Number of participants for each methodology selected

Different project methodologies exist in the industries. Question 19 was to understand what project methodology they follow in their current projects among waterfall, agile, and hybrid. Figure 44 shows the options given, and Figure 45 shows the percentage and count of every option chosen. Among the 3 majorities of them are following agile with 234 as count and 37.56%, whereas 182 following Hybrid with 29.21%. 119 participants, with 19.10%, are following waterfall in their current projects. 88, which is 14.33%, have selected OTHER methodologies.

From the survey results, it is understood that Agile is widely used in the industries now.

Q20) In your personal opinion, please select among the following statements as you see them today?

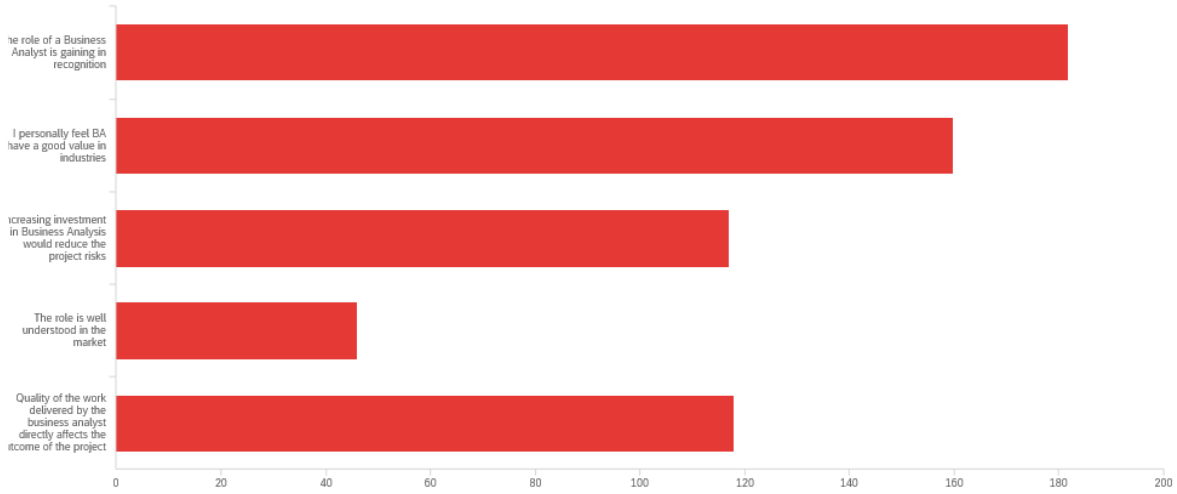


Figure 386. Frequency of Participants personal opinions about BA

Field		Choice Count
The role of a Business Analyst is gaining in recognition	29.21%	182
I personally feel BA have a good value in industries	25.68%	160
Increasing investment in Business Analysis would reduce the project risks	18.78%	117
The role is well understood in the market	7.38%	46
Quality of the work delivered by the business analyst directly affects the outcome of the project	18.94%	118
		623

Figure 397. Showing Number of participants for each opinion selected

The final question 20 is to give their personal opinions about the Business Analyst role in industries. Figure 46 shows the options given, and Figure 47 shows the percentage and count of every option chosen.

Among 623 182 participants, 29.21% have said that BA's role is gaining recognition in the market, and 160 with 25.68% are personally feeling that BA has good value in industries. 118 people, which is 18.94%, stated that the quality of the BA's work directly affects the results of the project, and 117 people with 18.78% said that increasing investments in BA would help reduce the project risks.46 people with 7.38% considered that the role of business analysts is well understood in the market.

4.5) Chi-Square Tests

The chi-square test is defined as the statistical analysis test used to measure the association between two variables. In this research, the chi-square test was performed using a trial version of the IBM SPSS Statistics Tool. The p-value was derived based on the chi-square analysis. This step is performed to evaluate the relation between the external variables and the survey question. In other aspects, this analysis is performed to check the hypothesis and statistical significance. If the **p-value** generated is more significant than **0.05**, then the tested variables are not substantial and do not relate to the corresponding variables. In other words, the hypothesis will be rejected if it is more significant than 0.05.

Chi-Square Tests have been conducted for the 4 Likert Scale Questions with the 3 Demographic Questions, which are given below.

Likert Scale Questions

Q5) Do you find more opportunities for a Business Analyst Role in the market?

Q10) How would you rate your performance as a Business Analyst?

Q12) How much does a success factor depend on a Business Analyst?

Q16) In your opinion, does the use of professional requirements management tools helps to ensure good quality in a project.

Demographic Questions

Q2) Which age group does you fit in?

Q3) What is your gender?

Q4) What is your designation in your organization?

Hence Crosstabs are performed as follows.

Table 8: Chi-Square Test Set 1

Likert Scale Question	Demographic Questions
Q5	Q2
	Q3
	Q4

Table 9: Chi-Square Test Set 2

Likert Scale Question	Demographic Questions
Q10	Q2
	Q3
	Q4

Table 10: Chi-Square Test Set 3

Likert Scale Question	Demographic Questions
Q12	Q2
	Q3
	Q4

Table 11: Chi-Square Test Set 4

Likert Scale Question	Demographic Questions
Q16	Q2
	Q3
	Q4

- **Q5 – Q2**

Q5) Do you find more opportunities for a Business Analyst Role in the market?

Q2) Which age group does you fit in?

Table 12: Age Group and Corresponding Codes

Question Number	Field	Responses	Codes
Q2	Age Group	18-24	1
		25-34	2
		35-44	3
		45-54	4
		55-64	5
		65+	6

Table 13: Opportunities in Market and Corresponding Codes

Question Number	Field	Responses	Codes
Q5	Opportunities in Market	Definitely yes	1
		Probably yes	2
		Might or might not	3
		Probably not	4
		Not	5

In this section, Figure 49 provides a detailed description of the distribution based on Age and business analysts' opportunities in the market. The participants were grouped by age into 18-24 years, 25-34 years, 35-44 years, 45-54 years, 55-64 years above 65. The opportunities of BA in the market were categorized on a five-point scale are definitely yes, probably yes, might or might not, probably not, and not. According to the distribution based on the age group and factors based on the opportunities of BA in the market, the highest number of participants was in the age group 25-34 years with 60.2%, followed by the age group 18-24 with 30.3%, 35-44 years with 6.5%, 45-54 years with 2.2%,55-64 years with 0.8% and above 65 years with 0.2%.

Crosstabs

[DataSet1]

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
OpportunitiesinMarket * AgeGroup	650	68.6%	298	31.4%	948	100.0%

Figure 408. Participants case summary of Q5 -Q2

OpportunitiesinMarket * AgeGroup Crosstabulation

			AgeGroup						
			1	2	3	4	5	6	Total
OpportunitiesinMarket	1	Count	60	111	18	5	0	0	194
		% of Total	9.2%	17.1%	2.8%	0.8%	0.0%	0.0%	29.8%
	2	Count	79	125	14	4	5	1	228
		% of Total	12.2%	19.2%	2.2%	0.6%	0.8%	0.2%	**35.1%**
	3	Count	40	116	7	3	0	0	166
		% of Total	6.2%	17.8%	1.1%	0.5%	0.0%	0.0%	25.5%
	4	Count	12	31	1	1	0	0	45
		% of Total	1.8%	4.8%	0.2%	0.2%	0.0%	0.0%	6.9%
	5	Count	6	8	2	1	0	0	17
		% of Total	0.9%	1.2%	0.3%	0.2%	0.0%	0.0%	2.6%
Total		Count	197	391	42	14	5	1	650
		% of Total	30.3%	**60.2%**	6.5%	2.2%	0.8%	0.2%	100.0%

Figure 4941. Distribution based on age and opportunities in the market

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	27.243[a]	20	.129
Likelihood Ratio	28.563	20	.097
Linear-by-Linear Association	.000	1	.990
N of Valid Cases	650		

a. 17 cells (56.7%) have expected count less than 5. The minimum expected count is .03.

Figure 420. Chi-Square test results for age and opportunities in the market

From Figure 50, **p = 0.129 > 0.05.**

Since the p-value is greater than 0.05, the results are not significant. Otherwise, it can be said that age and opportunities in the market are independent of each other.

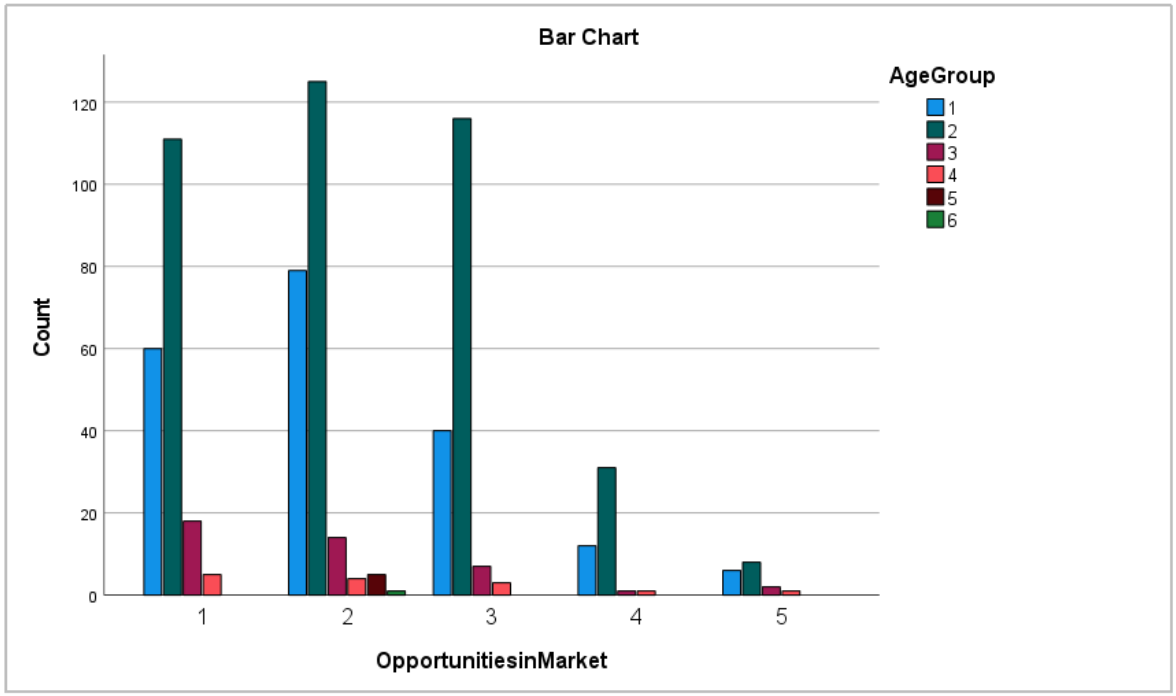


Figure 431. Bar graph representation of distribution based on age and opportunities in the market

- **Q5 – Q3**

Q5) Do you find more opportunities for a Business Analyst Role in the market?

Q3) What is your gender?

Table 14 Gender and Corresponding Codes

Question Number	Field	Responses	Codes
Q3	Gender	Male	1
		Female	2
		Other	3
		Do not want to state	4

Table 15: Opportunities in Market and Corresponding Codes

Question Number	Field	Responses	Codes
Q5	Opportunities in Market	Definitely yes	1
		Probably yes	2
		Might or might not	3
		Probably not	4
		Not	5

In this section, Figure 53 provides a detailed description of the distribution based on gender and business analysts' opportunities in the market. The participants chose to select the gender in this research from the listed groups male, female, other, and do not want to state. The opportunities of BA in the market were categorized on a five-point scale are definitely yes, probably yes, might or might not, probably not, and definitely not. According to the distribution based on gender and the Opportunities of the business analyst role in the Market, the highest number of participants were females with 53.7%, followed by male with 45.7% and four participants in the group who do not want to reveal their gender with 0.6%.

Crosstabs

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
OpportunitiesinMarket * Gender	659	69.5%	289	30.5%	948	100.0%

Figure 442. Participants case summary of Q5 -Q3

OpportunitiesinMarket * Gender Crosstabulation

			Gender			
			1	2	4	Total
OpportunitiesinMarket	1	Count	106	94	1	201
		% of Total	16.1%	14.3%	0.2%	30.5%
	2	Count	99	127	2	228
		% of Total	15.0%	19.3%	0.3%	**34.6%**
	3	Count	65	102	1	168
		% of Total	9.9%	15.5%	0.2%	25.5%
	4	Count	22	23	0	45
		% of Total	3.3%	3.5%	0.0%	6.8%
	5	Count	9	8	0	17
		% of Total	1.4%	1.2%	0.0%	2.6%
Total		Count	301	354	4	659
		% of Total	45.7%	**53.7%**	0.6%	100.0%

Figure 453. Distribution based on gender and opportunities in the market

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	8.935[a]	8	.348
Likelihood Ratio	9.293	8	.318
Linear-by-Linear Association	1.672	1	.196
N of Valid Cases	659		

a. 5 cells (33.3%) have expected count less than 5. The minimum expected count is .10.

Figure 464. Chi-Square test results for gender and opportunities in the market

From Figure 54 , **p = 0.348 > 0.05.**

Since the p-value is greater than 0.05, the results are not significant. Otherwise, it can be said that gender and opportunities in the market are independent of each other.

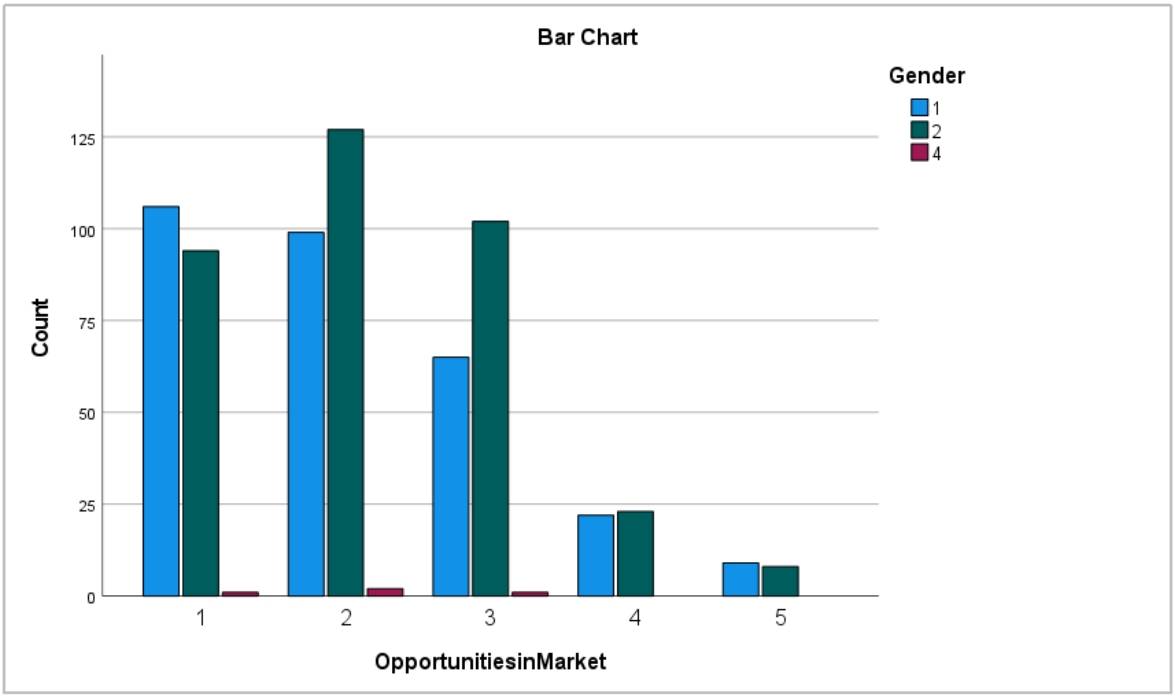


Figure 475. Bar graph representation of distribution based on gender and opportunities in the market

- **Q5 – Q4**

Q5) Do you find more opportunities for a Business Analyst Role in the market?

Q4) What is your designation in your organization?

Table 16: Designation and Corresponding Codes

Question Number	Field	Responses	Codes
Q4	Designation	Developer	1
		Tester	2
		Analyst	3
		Manager	4
		Administrator	5
		Help Desk	6
		Others	7

Table 17 Opportunities in the Market and Corresponding Codes

Question Number	Field	Responses	Codes
Q5	Opportunities in Market	Definitely yes	1
		Probably yes	2
		Might or might not	3

		Probably not	4
		Definitely not	5

In this section, Figure 57 provides a detailed description of the distribution based on Designation and business analysts' opportunities in the market. The participants chose to select their designation from the Developer, Tester, Analyst, Manager, Administrator, Helpdesk, and other options. Those roles were given to those roles to enter manually, not included in the given options. The opportunities of BA in the market were categorized on a five-point scale are definitely yes, probably yes, might or might not, probably not, and definitely not. According to the distribution based on the designation and factors based on BA's opportunities in the market, the highest number of participants was in the OTHER group with 45.2%, followed by the developers with 23.1%. Business Analysts were about 15.6% followed by Managers with 6.4%, Testers with 5.2%, Helpdesk analysts with 2.7%, and the least were Network administrators with 1.8%

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
OpportunitiesinMarket * Designation	659	69.5%	289	30.5%	948	100.0%

Figure 486. Participants case summary of Q5 -Q4

OpportunitiesinMarket * Designation Crosstabulation

			Designation							
			1	2	3	4	5	6	7	Total
OpportunitiesinMarket	1	Count	42	7	42	12	3	3	92	201
		% of Total	6.4%	1.1%	6.4%	1.8%	0.5%	0.5%	14.0%	30.5%
	2	Count	62	11	35	19	4	10	87	228
		% of Total	9.4%	1.7%	5.3%	2.9%	0.6%	1.5%	13.2%	**34.6%**
	3	Count	33	12	24	8	5	4	82	168
		% of Total	5.0%	1.8%	3.6%	1.2%	0.8%	0.6%	12.4%	25.5%
	4	Count	12	3	1	3	0	1	25	45
		% of Total	1.8%	0.5%	0.2%	0.5%	0.0%	0.2%	3.8%	6.8%
	5	Count	3	1	1	0	0	0	12	17
		% of Total	0.5%	0.2%	0.2%	0.0%	0.0%	0.0%	1.8%	2.6%
Total		Count	152	34	103	42	12	18	298	659
		% of Total	23.1%	5.2%	15.6%	6.4%	1.8%	2.7%	**45.2%**	100.0%

Figure 497. Distribution based on designation and opportunities in the market

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	32.210[a]	24	.122
Likelihood Ratio	37.152	24	.042
Linear-by-Linear Association	2.159	1	.142
N of Valid Cases	659		

a. 14 cells (40.0%) have expected count less than 5. The minimum expected count is .31.

Figure 508. Chi-Square test results for designation and opportunities in the market

From Figure 58, **p = 0.122 > 0.05.**

Since the p-value is greater than 0.05, the results are not significant. Otherwise, it can be said that designation and opportunities in the market are independent of each other.

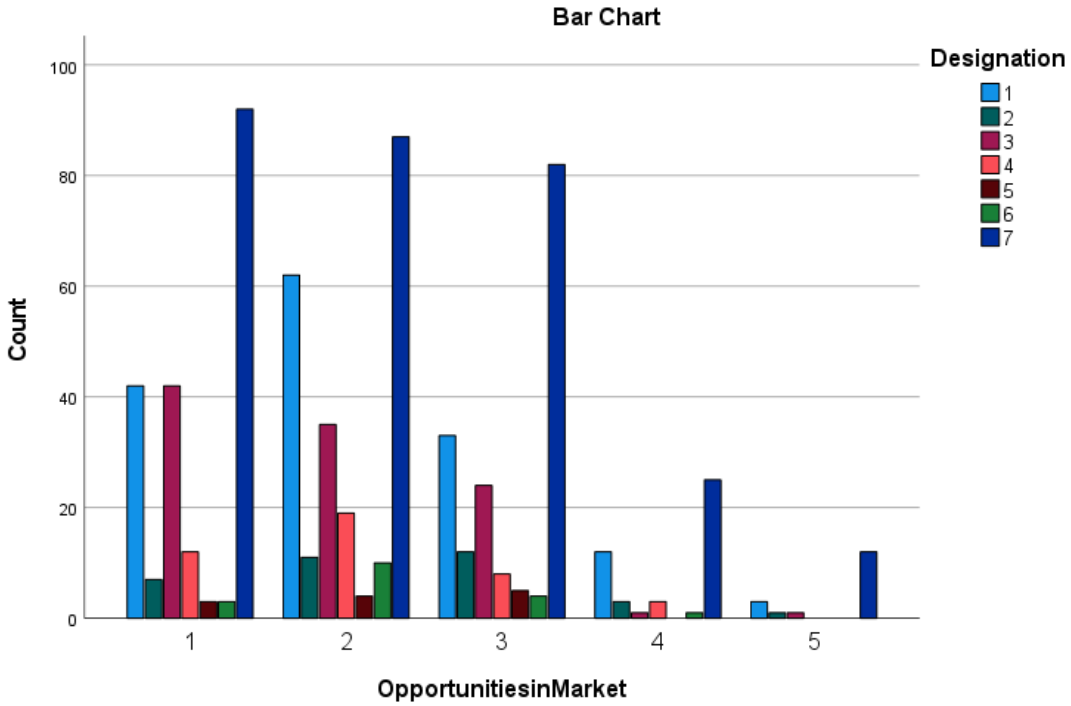


Figure 5951. Bar graph representation of the distribution of designation and opportunities in the market

- **Q10 – Q2**

Q10) How would you rate your performance as a Business Analyst?

Q2) Which age group do you fit in?

Table 18: Performance Rate as BA and Corresponding Codes

Question Number	Field	Responses	Codes
Q10	Performance Rate as BA	Far above average	1
		Moderately above	2
		Slightly above	3
		Average	4
		Slightly below	5
		Moderately below	6
		Far below	7

Table 19: Age Group and Corresponding Codes

Question Number	Field	Responses	Codes
Q2	Age Group	18-24	1
		25-34	2

		35-44	3
		45-54	4
		55-64	5
		65+	6

In this section, Figure 61 provides a detailed description of the distribution based on Age and the Performance Rate as a Business Analyst. The participants were grouped by age into 18-24 years, 25-34 years, 35-44 years, 45-54 years, 55-64 years above 65. The Performance Rate of BA in the market was categorized on a seven-point scale such as Far above average, Moderately above, Slightly above, Average, Slightly below, Moderately below, and Far below. According to the distribution based on the age group and Performance Rate as Business Analyst, the highest number of participants was in the age group 25-34 years with 60.2% followed by the age group 18-24 with 30.3%, 35-44 years with 6.5%, 45-54 years with 2.2%,55-64 years with 0.8% and above 65 years with 0.2%.

Crosstabs

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
PerformanceRateasBA * AgeGroup	650	68.6%	298	31.4%	948	100.0%

Figure 520. Participants case summary of Q10 -Q2

PerformanceRateasBA * AgeGroup Crosstabulation

			AgeGroup						
			1	2	3	4	5	6	Total
PerformanceRateasBA	1	Count	38	50	9	3	1	0	101
		% of Total	5.8%	7.7%	1.4%	0.5%	0.2%	0.0%	15.5%
	2	Count	59	133	11	5	1	1	210
		% of Total	9.1%	20.5%	1.7%	0.8%	0.2%	0.2%	**32.3%**
	3	Count	32	65	11	3	2	0	113
		% of Total	4.9%	10.0%	1.7%	0.5%	0.3%	0.0%	17.4%
	4	Count	53	123	8	3	1	0	188
		% of Total	8.2%	18.9%	1.2%	0.5%	0.2%	0.0%	28.9%
	5	Count	7	9	2	0	0	0	18
		% of Total	1.1%	1.4%	0.3%	0.0%	0.0%	0.0%	2.8%
	6	Count	5	5	0	0	0	0	10
		% of Total	0.8%	0.8%	0.0%	0.0%	0.0%	0.0%	1.5%
	7	Count	3	6	1	0	0	0	10
		% of Total	0.5%	0.9%	0.2%	0.0%	0.0%	0.0%	1.5%
Total		Count	197	391	42	14	5	1	650
		% of Total	30.3%	**60.2%**	6.5%	2.2%	0.8%	0.2%	100.0%

Figure 531. Distribution based on age and performance rate as BA

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	20.036[a]	30	.916
Likelihood Ratio	21.096	30	.885
Linear-by-Linear Association	.540	1	.463
N of Valid Cases	650		

a. 26 cells (61.9%) have expected count less than 5. The minimum expected count is .02.

Figure 542. Chi-Square test results for age and performance rate as BA

From Figure 62, **p = 0.916 > 0.05.**

Since the p-value is greater than 0.05, the results are not significant. Otherwise, it can be said that age and performance rate as BA are independent of each other.

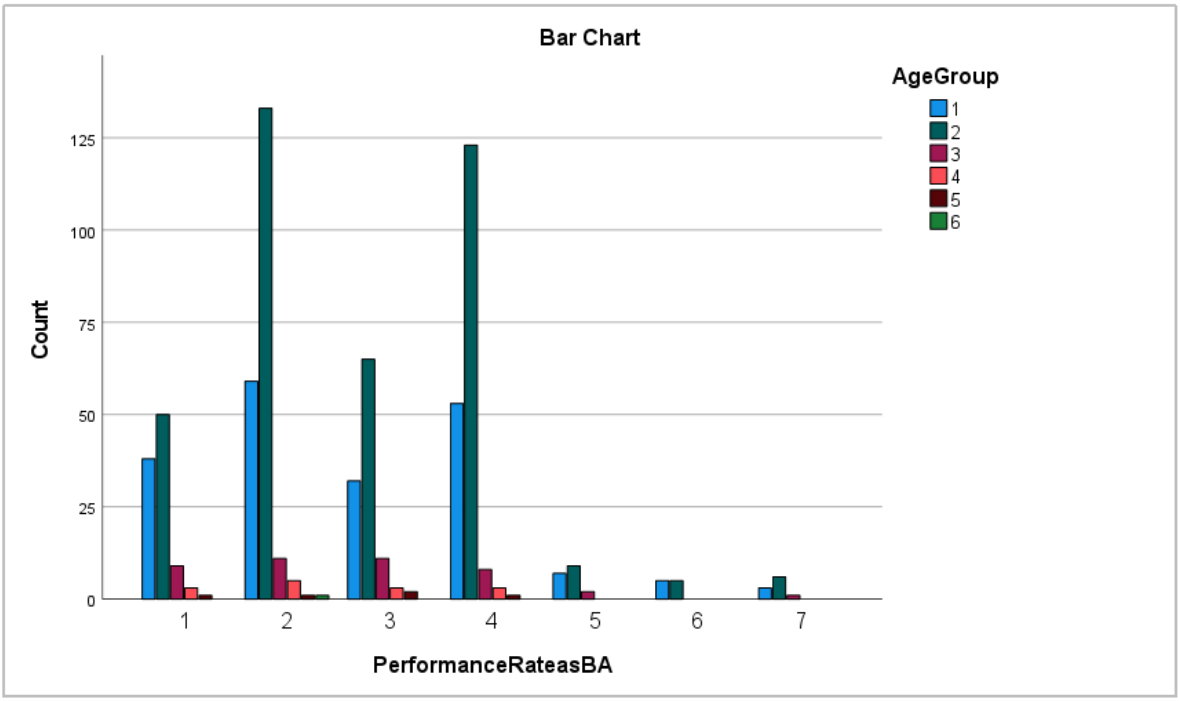


Figure 553. Bar graph representation of distribution based on age and performance rate as BA

- **Q10-Q3**

Table 20: Performance Rate as BA and Corresponding Codes

Question Number	Field	Responses	Codes
Q10	Performance Rate as BA	Far above average	1
		Moderately above	2
		Slightly above	3
		Average	4
		Slightly below	5
		Moderately below	6
		Far below	7

Table 21: Gender and Corresponding Codes

Question Number	Field	Responses	Codes
Q3	Gender	Male	1
		Female	2
		Other	3
		Do not want to state	4

In this section, Figure 65 provides a detailed description of the distribution based on gender and the Performance Rate as BA. The participants chose to select the gender in this research from the listed groups male, female, other, and do not want to state. The Performance Rate of BA in the market was categorized on a seven-point scale such as Far above average, Moderately above, Slightly above, Average, Slightly below, Moderately below, and Far below. According to the distribution based on the gender and Performance Rate as Business Analyst, the highest number of participants were females with 53.7%, followed by male with 45.7% and four participants in the group who do not want to reveal their gender with 0.6%.

Crosstabs

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
PerformanceRateasBA * Gender	659	69.5%	289	30.5%	948	100.0%

Figure 564. Participants case summary of Q10 -Q3

PerformanceRateasBA * Gender Crosstabulation

			Gender			
			1	2	4	Total
PerformanceRateasBA	1	Count	60	46	0	106
		% of Total	9.1%	7.0%	0.0%	16.1%
	2	Count	89	120	2	211
		% of Total	13.5%	18.2%	0.3%	**32.0%**
	3	Count	48	65	1	114
		% of Total	7.3%	9.9%	0.2%	17.3%
	4	Count	82	107	1	190
		% of Total	12.4%	16.2%	0.2%	28.8%
	5	Count	10	8	0	18
		% of Total	1.5%	1.2%	0.0%	2.7%
	6	Count	6	4	0	10
		% of Total	0.9%	0.6%	0.0%	1.5%
	7	Count	6	4	0	10
		% of Total	0.9%	0.6%	0.0%	1.5%
Total		Count	301	354	4	659
		% of Total	45.7%	**53.7%**	0.6%	100.0%

Figure 575. Distribution based on gender and performance rate as BA

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	10.588[a]	12	.565
Likelihood Ratio	11.331	12	.501
Linear-by-Linear Association	.134	1	.714
N of Valid Cases	659		

a. 9 cells (42.9%) have expected count less than 5. The minimum expected count is .06.

Figure 586. Chi-Square test results for gender and performance rate as BA

From Figure 66, **p = 0.565 > 0.05.**

Since the p-value is greater than 0.05, the results are not significant. Otherwise, it can be said that gender and performance rate as BA are independent of each other.

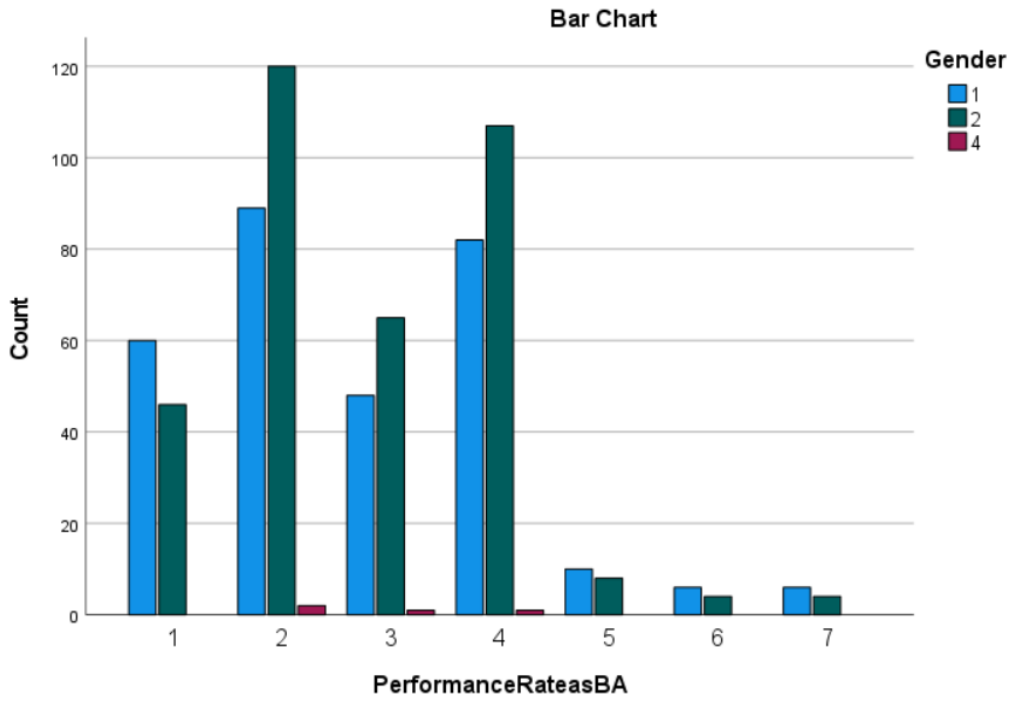


Figure 597. Bar graph representation of distribution based on gender and performance rate as BA

- **Q10-Q4**

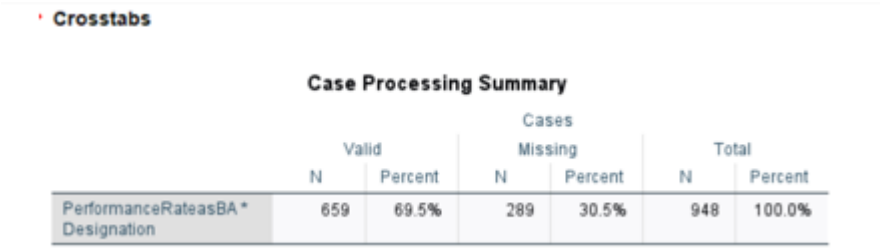
Table 22: Performance Rate as BA and Corresponding Codes

Question Number	Field	Responses	Codes
Q10	Performance Rate as BA	Far above average	1
		Moderately above	2
		Slightly above	3
		Average	4
		Slightly below	5
		Moderately below	6
		Far below	7

Table 23: Designation and Corresponding Codes

Question Number	Field	Responses	Codes
Q4	Designation	Developer	1
		Tester	2
		Analyst	3
		Manager	4
		Administrator	5
		Help Desk	6
		Others	7

In this section, Figure 69 provides a detailed description of the distribution based on Designation and business analysts' performance in the market. The participants chose to select their designation from the Developer, Tester, Analyst, Manager, Administrator, Helpdesk, and OTHERS options. Those roles were given to those roles to enter manually, not included in the given options. The performance of BA in the market was categorized on a seven-point scale such as Far above average, Moderately above, Slightly above, Average, Slightly below, Moderately below, and Far below. According to the distribution based on the designation and factors based on BA's performance in the market, the highest number of participants was in the OTHER group with 45.2%, followed by the developers with 23.1%. Business Analysts were about 15.6%, followed by Managers with 6.4%, Testers with 5.2%, Helpdesk analysts with 2.7%, and the least were Network administrators with 1.8%.



Crosstabs

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
PerformanceRateasBA * Designation	659	69.5%	289	30.5%	948	100.0%

Figure 608. Participants case summary of Q10 -Q4

PerformanceRateasBA * Designation Crosstabulation

			Designation							
			1	2	3	4	5	6	7	Total
PerformanceRateasBA	1	Count	25	5	16	9	0	5	46	106
		% of Total	3.8%	0.8%	2.4%	1.4%	0.0%	0.8%	7.0%	16.1%
	2	Count	45	8	39	15	3	6	95	211
		% of Total	6.8%	1.2%	5.9%	2.3%	0.5%	0.9%	14.4%	32.0%
	3	Count	27	5	21	8	4	1	48	114
		% of Total	4.1%	0.8%	3.2%	1.2%	0.6%	0.2%	7.3%	17.3%
	4	Count	47	15	23	8	4	5	88	190
		% of Total	7.1%	2.3%	3.5%	1.2%	0.6%	0.8%	13.4%	28.8%
	5	Count	5	0	2	0	1	1	9	18
		% of Total	0.8%	0.0%	0.3%	0.0%	0.2%	0.2%	1.4%	2.7%
	6	Count	1	1	0	1	0	0	7	10
		% of Total	0.2%	0.2%	0.0%	0.2%	0.0%	0.0%	1.1%	1.5%
	7	Count	2	0	2	1	0	0	5	10
		% of Total	0.3%	0.0%	0.3%	0.2%	0.0%	0.0%	0.8%	1.5%
Total		Count	152	34	103	42	12	18	298	659
		% of Total	23.1%	5.2%	15.6%	6.4%	1.8%	2.7%	45.2%	100.0%

Figure 61. Distribution based on designation and performance rate as BA

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	27.808[a]	36	.834
Likelihood Ratio	33.762	36	.575
Linear-by-Linear Association	.253	1	.615
N of Valid Cases	659		

a. 26 cells (53.1%) have expected count less than 5. The minimum expected count is .18.

Figure 620. Chi-Square test results for designation and performance rate as BA

From Figure 70, **p = 0.834 > 0.05.**

Since the p-value is greater than 0.05, the results are not significant. Otherwise, it can be said that designation and performance rate as BA are independent of each other.

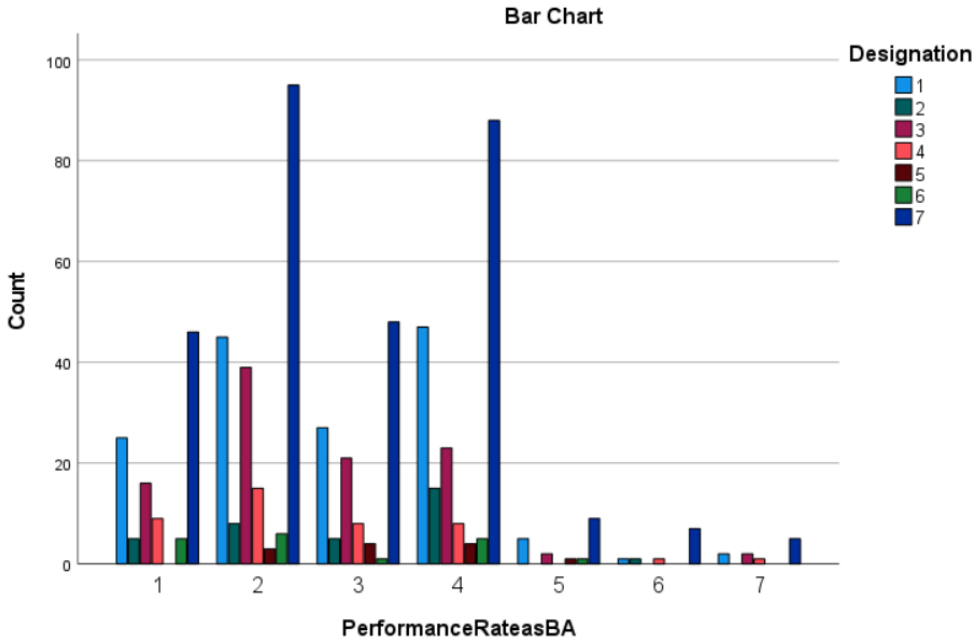


Figure 631. Bar graph representation of distribution based on designation and performance rate as BA

- **Q12-Q2**

Table 24: Success Factor and Corresponding Codes

Question Number	Field	Responses	Codes
Q12	Success Factor Dependency on BA	Much higher	1
		Moderately higher	2
		Slightly higher	3
		About the same	4
		Slightly lower	5
		Moderately lower	6
		Much lower	7

Table 25: Age Group and Corresponding Codes

Question Number	Field	Responses	Codes
Q2	Age Group	18-24	1
		25-34	2
		35-44	3
		45-54	4
		55-64	5
		65+	6

In this section, Figure 73 provides a detailed description of the distribution based on Age and the Success Factor Dependency on a Business Analyst. The participants were grouped by age into 18-24 years, 25-34 years, 35-44 years, 45-54 years, 55-64 years above 65. The Success Factor Dependency on a Business Analyst was categorized in a seven-point scale such as Much higher, Moderately higher, Slightly higher, About the same, Slightly lower, Moderately lower, and Much quieter. According to the distribution based on the age group and Success Factor Dependency on a Business Analyst, the highest number of participants was in the age group 25-34 years with 60.2%, followed by the age group 18-24 with 30.3%, 35-44 years with 6.5%, 45-54 years with 2.2%,55-64 years with 0.8% and above 65 years with 0.2%.

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
SuccessFactorDependencyonBA * AgeGroup	650	68.6%	298	31.4%	948	100.0%

Figure 642. Participants case summary of Q12 -Q2

SuccessFactorDependencyonBA * AgeGroup Crosstabulation

			AgeGroup						
			1	2	3	4	5	6	Total
SuccessFactorDependencyonBA	1	Count	51	89	8	3	0	0	151
		% of Total	7.8%	13.7%	1.2%	0.5%	0.0%	0.0%	23.2%
	2	Count	56	141	20	5	3	1	226
		% of Total	8.6%	21.7%	3.1%	0.8%	0.5%	0.2%	34.8%
	3	Count	38	86	8	2	2	0	136
		% of Total	5.8%	13.2%	1.2%	0.3%	0.3%	0.0%	20.9%
	4	Count	34	66	4	3	0	0	107
		% of Total	5.2%	10.2%	0.6%	0.5%	0.0%	0.0%	16.5%
	5	Count	8	7	0	1	0	0	16
		% of Total	1.2%	1.1%	0.0%	0.2%	0.0%	0.0%	2.5%
	6	Count	6	0	2	0	0	0	8
		% of Total	0.9%	0.0%	0.3%	0.0%	0.0%	0.0%	1.2%
	7	Count	4	2	0	0	0	0	6
		% of Total	0.6%	0.3%	0.0%	0.0%	0.0%	0.0%	0.9%
Total		Count	197	391	42	14	5	1	650
		% of Total	30.3%	60.2%	6.5%	2.2%	0.8%	0.2%	100.0%

Figure 653. Distribution based on age and success factor dependency on BA

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	37.107[a]	30	.174
Likelihood Ratio	41.349	30	.081
Linear-by-Linear Association	2.197	1	.138
N of Valid Cases	650		

a. 29 cells (69.0%) have expected count less than 5. The minimum expected count is .01.

Figure 664. Chi-Square test results for age and success factor dependency on BA

From Figure 74, **p = 0.174 > 0.05.**

Since the p-value is greater than 0.05, the results are not significant. Otherwise, it can be said that age and success factor dependency on BA are independent of each other.

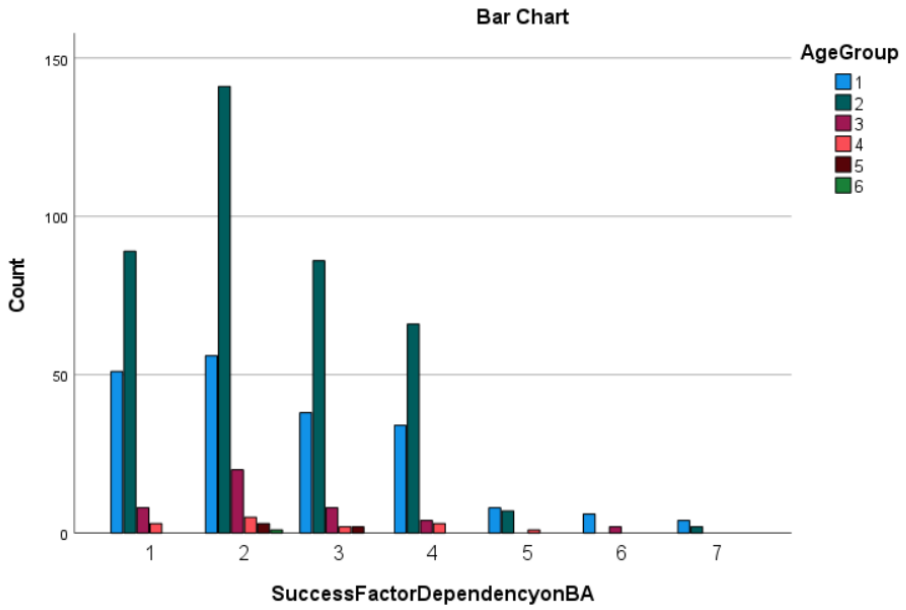


Figure 675. Bar graph representation of distribution based on age and success factor dependency on BA

- **Q12-Q3**

Table 26: Success Factor and Corresponding Codes

Question Number	Field	Responses	Codes
Q12	Success Factor Dependency on BA	Much higher	1
		Moderately higher	2
		Slightly higher	3
		About the same	4
		Slightly lower	5
		Moderately lower	6
		Much lower	7

Table 27: Gender and Corresponding Codes

Question Number	Field	Responses	Codes
Q3	Gender	Male	1
		Female	2
		Other	3
		Do not want to state	4

In this section, Figure 77 provides a detailed description of the distribution based on gender and the Success Factor Dependency on a Business Analyst. The participants chose to select the gender in this research from the listed groups male, female, other, and do not want to state. The Success Factor Dependency on a Business Analyst was categorized in a seven-point scale such as Much higher, Moderately higher, Slightly higher, About the same, Slightly lower, Moderately lower, and Much quieter. According to the distribution based on the gender and Success Factor Dependency on a Business Analyst, the highest number of participants were females with 53.7%, followed by male with 45.7% and four participants in the group who do not want to reveal their gender with 0.6%.

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
SuccessFactorDependencyonBA * Gender	659	69.5%	289	30.5%	948	100.0%

Figure 686. Participants case summary of Q12 -Q3

SuccessFactorDependencyonBA * Gender Crosstabulation

			Gender			
			1	2	4	Total
SuccessFactorDependencyonBA	1	Count	82	74	1	157
		% of Total	12.4%	11.2%	0.2%	23.8%
	2	Count	93	131	2	226
		% of Total	14.1%	19.9%	0.3%	**34.3%**
	3	Count	63	75	0	138
		% of Total	9.6%	11.4%	0.0%	20.9%
	4	Count	45	61	1	107
		% of Total	6.8%	9.3%	0.2%	16.2%
	5	Count	10	6	0	16
		% of Total	1.5%	0.9%	0.0%	2.4%
	6	Count	4	5	0	9
		% of Total	0.6%	0.8%	0.0%	1.4%
	7	Count	4	2	0	6
		% of Total	0.6%	0.3%	0.0%	0.9%
Total		Count	301	354	4	659
		% of Total	45.7%	**53.7%**	0.6%	100.0%

Figure 697. Distribution based on gender and success factor dependency on BA

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	9.380[a]	12	.670
Likelihood Ratio	10.343	12	.586
Linear-by-Linear Association	.020	1	.888
N of Valid Cases	659		

a. 11 cells (52.4%) have expected count less than 5. The minimum expected count is .04.

Figure 708. Chi-Square test results for gender and success factor dependency on BA

From Figure 78, **p = 0.670 > 0.05.**

Since the p-value is greater than 0.05, the results are not significant. Otherwise, it can be said that gender and success factor dependency on BA are independent of each other.

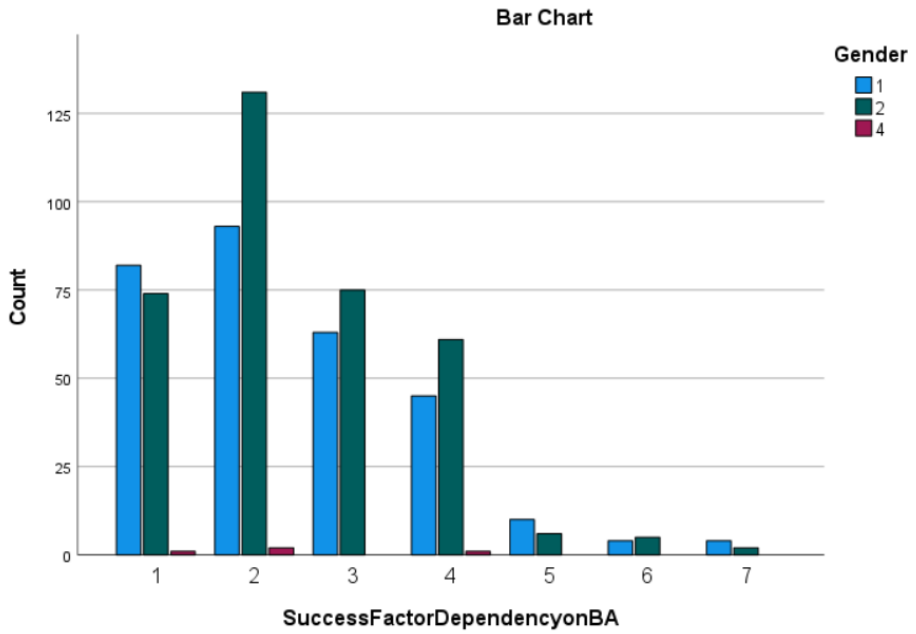


Figure 71. Bar graph representation of distribution based on gender and success factor dependency on BA

- **Q12-Q4**

Table 28: Success Factor and Corresponding Codes

Question Number	Field	Responses	Codes
Q12	Success Factor Dependency on BA	Much higher	1
		Moderately higher	2
		Slightly higher	3
		About the same	4
		Slightly lower	5
		Moderately lower	6
		Much lower	7

Table 29: Designation and Corresponding Codes

Question Number	Field	Responses	Codes
Q4	Designation	Developer	1
		Tester	2
		Analyst	3
		Manager	4
		Administrator	5
		Help Desk	6

		Others	7

In this section, Figure 81 provides a detailed description of the distribution based on designation and the Success Factor Dependency on a Business Analyst. The participants chose to select their designation from the Developer, Tester, Analyst, Manager, Administrator, Helpdesk, and OTHERS options. Those roles were given to those roles to enter manually, not included in the given options. The Success Factor Dependency on a Business Analyst was categorized in a seven-point scale such as Much higher, Moderately higher, Slightly higher, About the same, Slightly lower, Moderately lower, and Much lower. According to the distribution based on the designation and factors based on the Success Factor Dependency on a Business Analyst, the highest number of participants was in the OTHER group with 45.2%, followed by the developers with 23.1%. Business Analysts were about 15.6% followed by Managers with 6.4%, Testers with 5.2%, Helpdesk analysts with 2.7%, and the least were Network administrators with 1.8%

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
SuccessFactorDependencyonBA * Designation	659	69.5%	289	30.5%	948	100.0%

Figure 720. Participants case summary of Q12 -Q4

SuccessFactorDependencyonBA * Designation Crosstabulation

			Designation							
			1	2	3	4	5	6	7	Total
SuccessFactorDependencyonBA	1	Count	41	11	22	9	2	4	68	157
		% of Total	6.2%	1.7%	3.3%	1.4%	0.3%	0.6%	10.3%	23.8%
	2	Count	56	8	40	12	3	6	101	226
		% of Total	8.5%	1.2%	6.1%	1.8%	0.5%	0.9%	15.3%	34.3%
	3	Count	32	10	20	8	5	1	62	138
		% of Total	4.9%	1.5%	3.0%	1.2%	0.8%	0.2%	9.4%	20.9%
	4	Count	21	4	17	11	1	7	46	107
		% of Total	3.2%	0.6%	2.6%	1.7%	0.2%	1.1%	7.0%	16.2%
	5	Count	1	1	3	1	1	0	9	16
		% of Total	0.2%	0.2%	0.5%	0.2%	0.2%	0.0%	1.4%	2.4%
	6	Count	1	0	1	0	0	0	7	9
		% of Total	0.2%	0.0%	0.2%	0.0%	0.0%	0.0%	1.1%	1.4%
	7	Count	0	0	0	1	0	0	5	6
		% of Total	0.0%	0.0%	0.0%	0.2%	0.0%	0.0%	0.8%	0.9%
Total		Count	152	34	103	42	12	18	298	659
		% of Total	23.1%	5.2%	15.6%	6.4%	1.8%	2.7%	45.2%	100.0%

Figure 731. Distribution based on designation and success factor dependency on BA

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	35.621[a]	36	.486
Likelihood Ratio	37.982	36	.379
Linear-by-Linear Association	5.850	1	.016
N of Valid Cases	659		

a. 27 cells (55.1%) have expected count less than 5. The minimum expected count is .11.

Figure 742. Chi-Square test results for designation and success factor dependency on BA

From Figure 82, **p = 0.486 > 0.05.**

Since the p-value is greater than 0.05, the results are not significant. Otherwise, it can be said that designation and success factor dependency on BA are independent of each other.

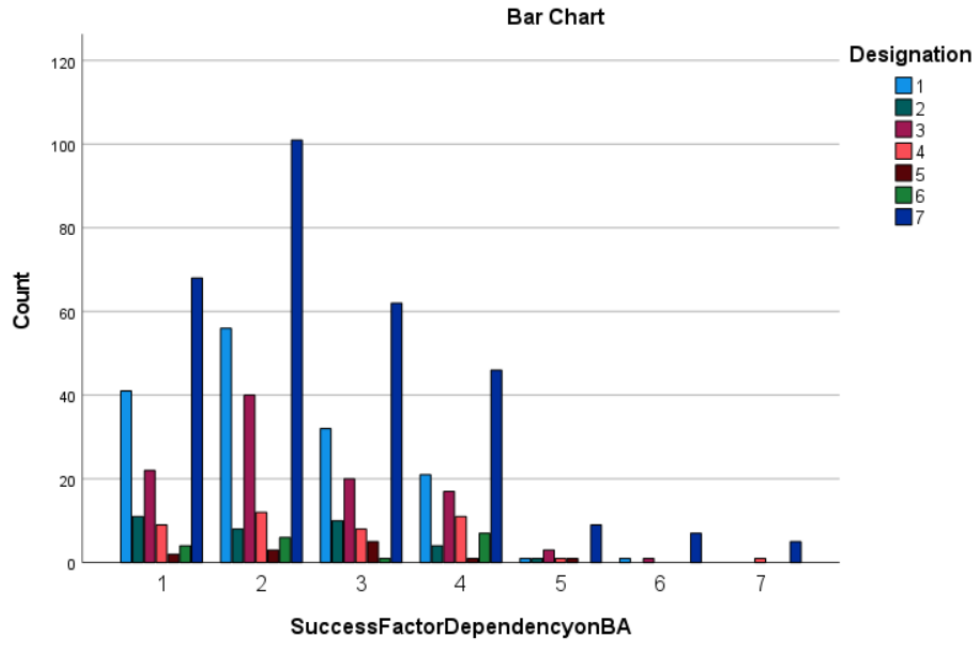


Figure 753. Bar graph representation of distribution based on designation and success factor dependency on BA

- **Q16-Q2**

Table 30: Professional tools good quality and Corresponding Codes

Question Number	Field	Responses	Codes
Q16	Professional tools ensure good quality	Yes	1
		No	2

Table 31: Age Group and Corresponding Codes

Question Number	Field	Responses	Codes
Q2	Age Group	18-24	1
		25-34	2
		35-44	3
		45-54	4
		55-64	5
		65+	6

In this section, Figure 85 provides a detailed description of the distribution based on the age group and the Professional tools that ensure good quality. The participants were grouped by age into 18-24 years, 25-34 years, 35-44 years, 45-54 years, 55-64 years above 65. Professional tools ensure good quality were categorized on a Two-point scale as YES or NO. According to the distribution based on the age group and Professional tools ensure good quality, the highest number of participants was in the age group 25-34 years with 60.2% followed by the age group 18-24 with 30.3%, 35-44 years with 6.5%, 45-54 years with 2.2%,55-64 years with 0.8% and above 65 years with 0.2%.

Crosstabs

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Professionaltoolsensuregoodquality * AgeGroup	650	68.6%	298	31.4%	948	100.0%

Figure 764. Participants case summary of Q16 -Q2

Professionaltoolsensuregoodquality * AgeGroup Crosstabulation

			AgeGroup						
			1	2	3	4	5	6	Total
Professionaltoolsensuregoodquality	1	Count	188	372	37	14	5	1	617
		% of Total	28.9%	57.2%	5.7%	2.2%	0.8%	0.2%	**94.9%**
	2	Count	9	19	5	0	0	0	33
		% of Total	1.4%	2.9%	0.8%	0.0%	0.0%	0.0%	5.1%
Total		Count	197	391	42	14	5	1	650
		% of Total	30.3%	**60.2%**	6.5%	2.2%	0.8%	0.2%	100.0%

Figure 775. Distribution based on age and professional tools quality ensure

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	5.277[a]	5	.383
Likelihood Ratio	5.231	5	.388
Linear-by-Linear Association	.135	1	.714
N of Valid Cases	650		

a. 6 cells (50.0%) have expected count less than 5. The minimum expected count is .05.

Figure 786. Chi-Square test results for age and professional tools quality ensure

From Figure 86, **p = 0.383 > 0.05.**

Since the p-value is greater than 0.05, the results are not significant. Otherwise, it can be said that age and professional tools quality ensure are independent of each other.

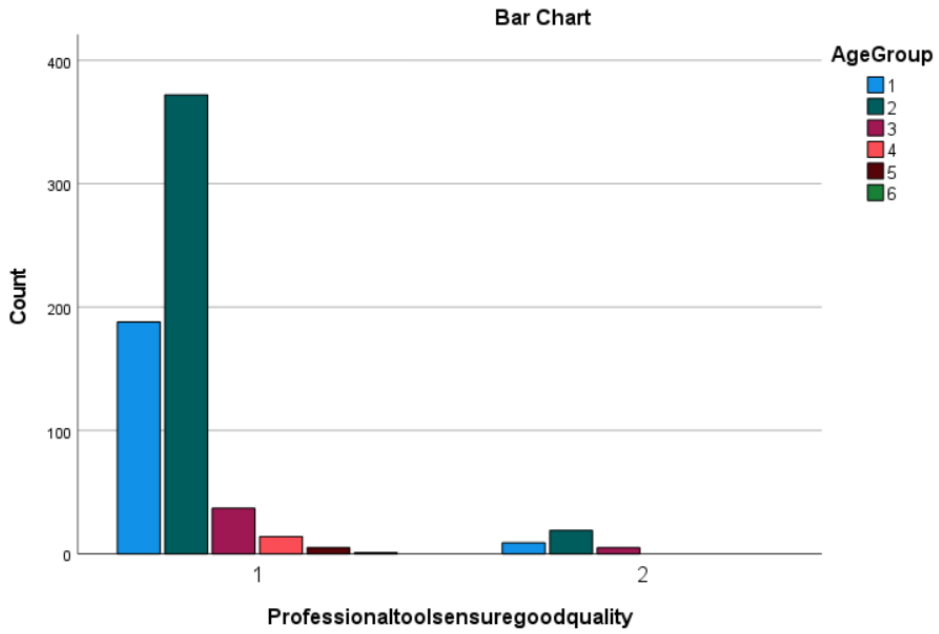


Figure 797. Bar graph representation of distribution based on age and professional tools ensure quality

- **Q16-Q3**

Table 32: Professional tools good quality and Corresponding Codes

Question Number	Field	Responses	Codes
Q16	Professional tools ensure good quality	Yes	1
		No	2

Table 33: Gender and Corresponding Codes

Question Number	Field	Responses	Codes
Q3	Gender	Male	1
		Female	2
		Other	3
		Do not want to state	4

In this section, Figure 89 provides a detailed description of the distribution based on gender, and the Professional tools ensure good quality. The participants chose to select the gender in this research from the listed groups male, female, other, and do not want to state. The Professional tools ensure good quality were categorized on a two-point scale such as YES or NO. According to the distribution based on the gender and Professional tools ensure good quality, the highest number of participants were females with 53.7%, followed by male with 45.7% and four participants in the group who do not want to reveal their gender with 0.6%.

Crosstabs

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Professionaltoolsensure goodquality * Gender	659	69.5%	289	30.5%	948	100.0%

Figure 808. Participants case summary of Q16 -Q3

Professionaltoolsensuregoodquality * Gender Crosstabulation

			Gender			
			1	2	4	Total
Professionaltoolsensure goodquality	1	Count	285	336	4	625
		% of Total	43.2%	51.0%	0.6%	**94.8%**
	2	Count	16	18	0	34
		% of Total	2.4%	2.7%	0.0%	5.2%
Total		Count	301	354	4	659
		% of Total	45.7%	**53.7%**	0.6%	100.0%

Figure 8981. Distribution based on gender and professional tools quality ensure

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	.237[a]	2	.888
Likelihood Ratio	.443	2	.801
Linear-by-Linear Association	.085	1	.770
N of Valid Cases	659		

a. 2 cells (33.3%) have expected count less than 5. The minimum expected count is .21.

Figure 820. Chi-Square test results for gender and professional tools quality ensure

From Figure 90, **p = 0.888 > 0.05.**

Since the p-value is greater than 0.05, the results are not significant. Otherwise, it can be said that gender and professional tools quality ensure are independent of each other.

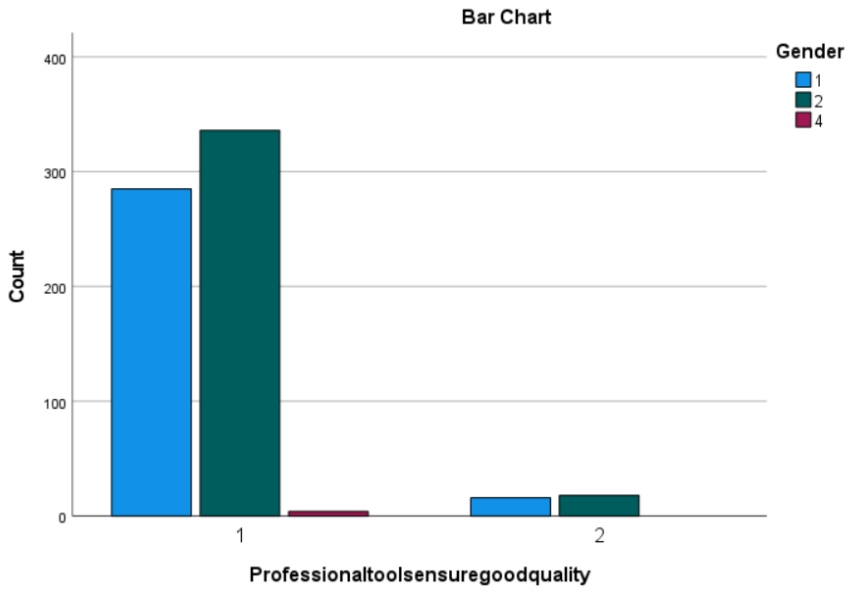


Figure 831. Bar graph representation of distribution based on gender and professional tools ensure quality

- **Q16-Q4**

Table 34: Professional tools good quality and Corresponding Codes

Question Number	Field	Responses	Codes
Q16	Professional tools ensure good quality	Yes	1
		No	2

Table 35: Designation and Corresponding Codes

Question Number	Field	Responses	Codes
Q4	Designation	Developer	1
		Tester	2
		Analyst	3
		Manager	4
		Administrator	5
		Help Desk	6
		Others	7

In this section, Figure 93 provides a detailed description of the distribution based on designation and the Professional tools that ensure good quality. The participants chose to select their designation from the Developer, Tester, Analyst, Manager, Administrator, Helpdesk, and OTHERS option options. Those roles were given to those roles to enter manually, not included in the given options. The Professional tools ensure good quality were categorized on a two-point scale such as YES or NO. According to the distribution based on the designation and factors based on the Professional tools ensure good quality, the highest number of participants was in the OTHER group with 45.2%, followed by the developers with 23.1%. Business Analysts were about 15.6%, followed by Managers with 6.4%, Testers with 5.2%, Helpdesk analysts with 2.7%, and the least were Network administrators with 1.8%.

Crosstabs

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Professionaltoolsensure goodquality * Designation	659	69.5%	289	30.5%	948	100.0%

Figure 842. Participants case summary of Q16 -Q4

Professionaltoolsensuregoodquality * Designation Crosstabulation

			Designation							
			1	2	3	4	5	6	7	Total
Professionaltoolsensure goodquality	1	Count	144	32	98	36	11	17	287	625
		% of Total	21.9%	4.9%	14.9%	5.5%	1.7%	2.6%	43.6%	**94.8%**
	2	Count	8	2	5	6	1	1	11	34
		% of Total	1.2%	0.3%	0.8%	0.9%	0.2%	0.2%	1.7%	5.2%
Total		Count	152	34	103	42	12	18	298	659
		% of Total	23.1%	5.2%	15.6%	6.4%	1.8%	2.7%	**45.2%**	100.0%

Figure 853. Distribution based on designation and professional tools quality ensure

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	8.774[a]	6	.187
Likelihood Ratio	6.661	6	.353
Linear-by-Linear Association	.849	1	.357
N of Valid Cases	659		

a. 4 cells (28.6%) have expected count less than 5. The minimum expected count is .62.

Figure 864. Chi-Square test results for designation and professional tools quality ensure

From Figure 94, **p = 0.187 > 0.05.**

Since the p-value is greater than 0.05, the results are not significant. Otherwise, it can be said that designation and professional tools quality ensure are independent of each other.

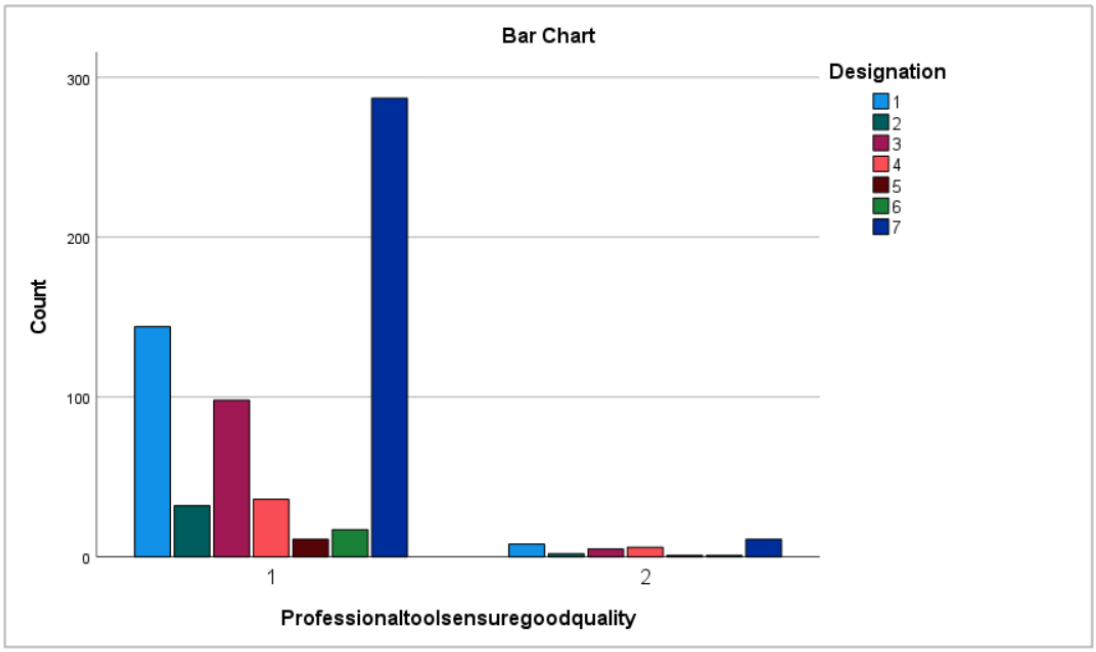


Figure 875. Bar graph representation of distribution based on designation and professional tools ensure quality

4.6) Conclusion

This section gathers the results that are performed based on the online survey. The data is collected from the online survey results and discussed each part in section 4. The discussed components are further analysed in section 4.4, and the chi-squared test is performed to find the hypothesis are significant or not in section 4.5 discussion. These steps are performed to answer the main research question and the sub-research question from section 3.2. Business analysts' impacts in India's organizations were studied by identifying the factors influencing customer opinion and employees on business analysis in the industry (Renny et al., 2014). The result shows that the communication, analytical, technical, and stakeholder management skills of a business analyst has an impact on the factors that influence the customer's relationship with the resources, revenue improvement of the company, performance of the business, and the factors that lead a project to success as discussed in section 4.4. The actual firm growth is entirely dependent on these aspects, as mentioned in Figure 4.

5. DISCUSSION

5.1) Association between dependent and independent variables

Table 36: Variables

Dependent Variables	Independent Variables
Stakeholder Management	Success Factors
Analytical Skills	Business Performance
Technical Skills	Improved Revenue
Communication	

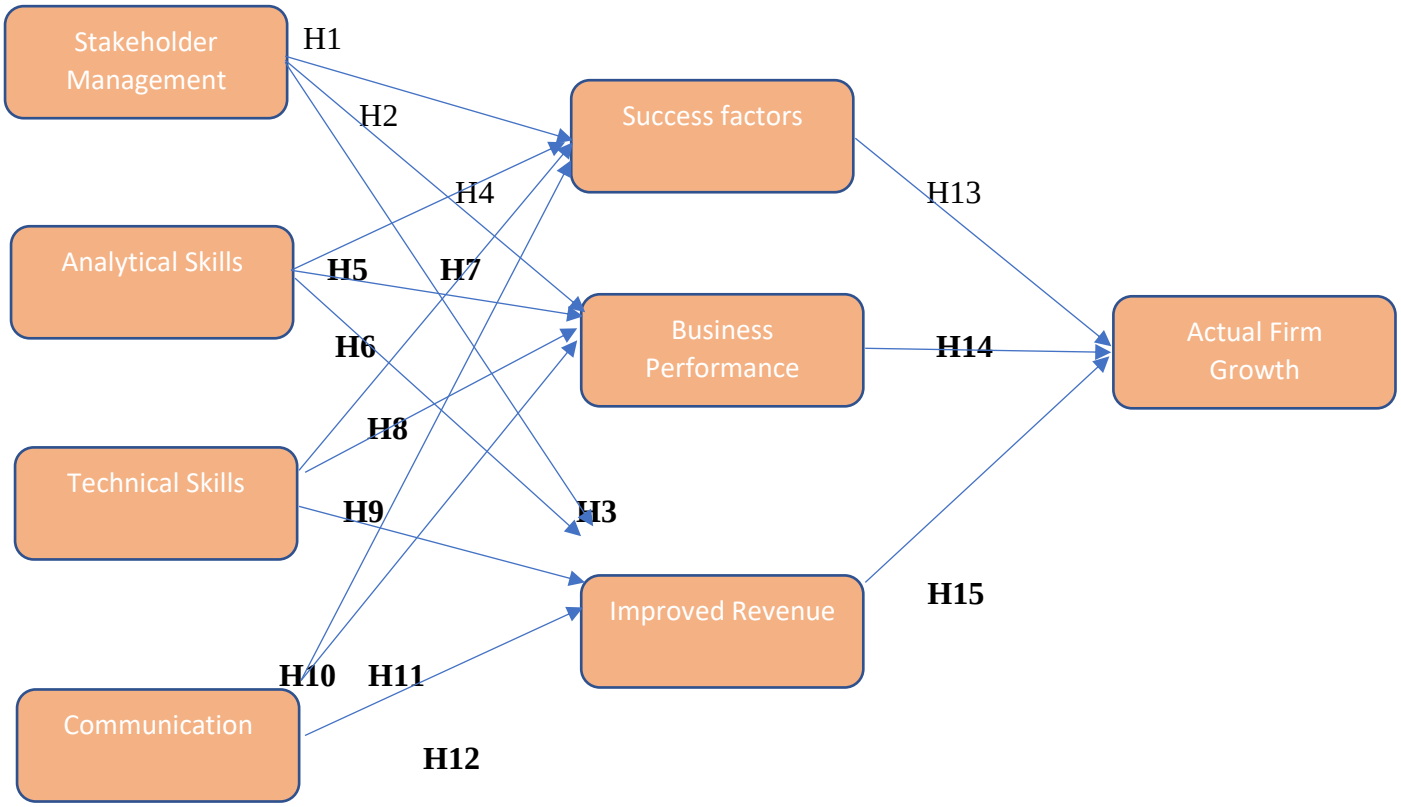


Figure 886. The Framework for Hypotheses – Business Analysis Model – BAM (Researcher's work)

H1) Stakeholder Management has a positive impact on success factors.

In section 4.4, **Question 6** was about the primary skills required to be a business analyst. Stakeholder management was only selected by 134 people among different choices and resulted in the least priority survey results with 6.74%. Hence stakeholder management is not a much-required primary skill according to participants' view. Therefore, the success factor of a project will not be dependent on a relationship with stakeholders. Thus, hypothesis H1 can be rejected, or otherwise, it can be said that there is no relationship between stakeholder management and success factors.

But this contradicts the literature findings. Being a business analyst can be difficult and is undoubtedly demanding. New business analysts may not have experience in various business analyst specifications, but robust general documentation and writing skills will start. The Analysis Techniques are the models and templates used to evaluate and think about business analysts' requirements. Literature findings also state that communication and data analysis play a significant role in a BA. But these specifications are not produced in a vacuum. BAs need to solicit them from our stakeholders or locate them (Flothmann, Hoberg, & Wieland, 2018). The findings confirmed the literature review in section 2.3. and 2.7. But findings from the literature overweight the survey results.

But to conclude, based on the survey results, **H1 is Not Supported**.

H2) Stakeholder Management has a positive impact on business performance.

In section 4.4, **Question 9** was to understand the benefits offered by a BA. Among various choices, ‘better communication with stakeholders’ was the second-highest option chosen by the participants, selected by 244 participants among 623. As per the survey results, stakeholder management is considered a business analyst's benefit, improving business performance. Hence stakeholder management has a positive impact on Business Performance.

According to literature views, the resources must know enough about business to engage with business stakeholders and learn about technology to engage the technology stakeholders (Johnson, Farach, Pelphrey, & Rozenblit, 2016). Corporate longevity, that is, a company's ability to continue to function for an extended period, depends on its stakeholder relationships being sustainable. Such sustainability accounting systems should expand and incorporate conventional financial approaches to corporate performance measurement, taking stakeholder

needs. The results confirmed the literature review in section 2.3 and 2.8. Hence literature review also supports H2.

To conclude, based on the survey results, **H2 is Supported**.

H3) Stakeholder Management has a positive impact on improved revenue.

In section 4.4, **Question 7** was to understand the goals of a BA. 'Directing the Growth' was the participants' highest selected option, with 21.39% among various choices. As discussed in the previous section, stakeholder management can improve business performance, directly enhancing revenue. Directing growth is also all about improving revenue. Hence stakeholder management has a positive impact on improved revenue.

Literature findings say that good relationships between stakeholders not only allow a company with superior financial results to retain its competitive advantage for a more extended period but, more importantly, also enable poorly performing companies to rebound more quickly from disadvantageous positions. Furthermore, positive stakeholder relations in helping companies rebound from bad results is more important than its role in helping prominent companies retain their performance advantage (Block, 2019). The results confirmed the literature review in section 2.3 and 2.9.

Hence **H3 is Supported**.

Based on the above discussions, the 3 hypotheses can be mapped according to the theoretical framework as follows :

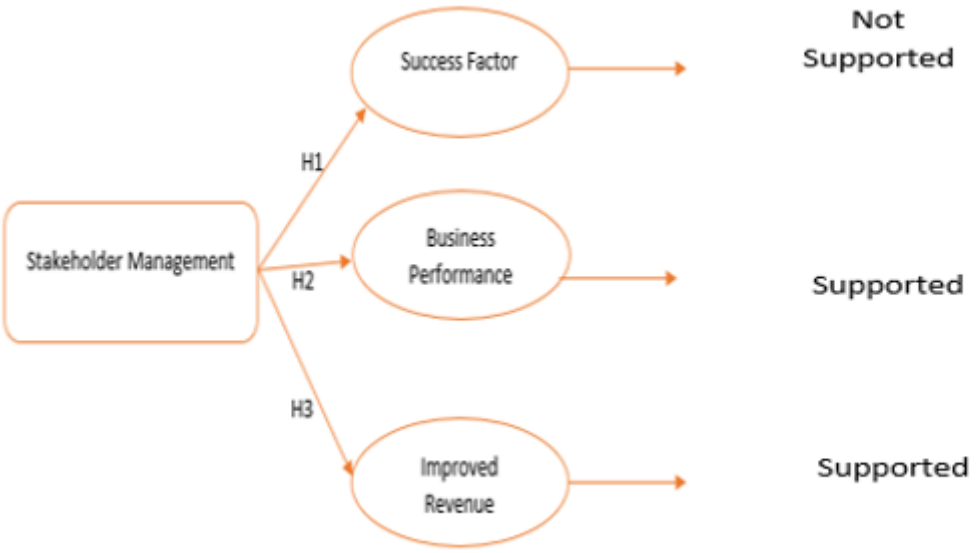


Figure 897. Framework of Hypotheses 1, 2 & 3

H4) Analytical Skills have a positive impact on success factors.

In section 4.4, **Question 6** was about the primary skills required to be a business analyst. Among the given choices, communication, document writing skills, problem-solving, decision making were the analytical skills. Communication was chosen by 287 people and resulted in the highest priority in the survey results with 14.44%. Next decision making was selected by 242 people, and problem-solving by 226 people. Document writing skills were comparatively preferred the least among these four options, but still, it was chosen by 164 people. Hence to conclude, all these analytical skills are much-required primary skills according to participants view. Therefore, the success factor of a project will be dependent on analytical skills. Thus, hypothesis H4 can be accepted or otherwise; it can be said that there a relationship between analytical skills and success factors.

To conclude, based on the survey results, **H4 is Supported**.

Literature findings also support the same as the survey results. The business analyst's primary goal is to help organizations cost-effectively incorporate technological solutions by defining a project or program's specifications and communicating them clearly to stakeholders, facilitators, and partners. A business analyst needs to have excellent analytical skills and be calculated and confident in making tough decisions (Brady & Denison, 2016). The results confirmed the literature review in section 2.4 and 2.7.

H5) Analytical Skills have a positive impact on business performance.

In section 4.4, **Question 9** was about the benefits offered by a business analyst. Different choices were given, including some analytical skills like ‘improved collaboration with resources’ and ‘time-efficient,’ which plays a leading role in improving business performance. All of the given choices were selected highly by the participants with a count of 259. 193 people and time-efficient chose improved collaboration by 152 people. Nearly 20% of the participants feel that these analytical skills are essential benefits offered by a BA, directly enhancing business performance. Therefore, analytical skills have a positive impact on business performance.

Hence **H5 is Supported.**

Literature findings also state the same. In an SDLC loop, the literature review says the elicitation step of requirements is usually right initially, which is a critical stage that will make or break the project, as has often been repeated. In this time, the company users invest significant time with the company analysts in the entire SDLC. Because these are oriented seminars or conferences, the company analyst must make the most of business users' time and expertise. In the future, there will be no stage that gives this privilege to the BA, or if so possible, it will be very hard for all the resources working on the project because of the new changes. Hence analysing the business needs is a critical step in a project (Flothmann, Hoberg, & Wieland, 2018). The results confirmed the literature review in section 2.4 and 2.8.

H6) Analytical Skills have a positive impact on improved revenue.

In section 4.4, **Question 20** was about personal opinions about the effects of a business analyst. Different choices were given, including 'Quality of the work delivered by the business analysis directly affects the project's outcome. The outcome of the project also includes revenue. This option was chosen by 118 participants among 623, nearly 20% of the population. Analytical skills like project management, decision making, problem-solving, and resource allocation play a role in improving the project's quality. In Q15, which is about BA's primary services, planning and monitoring were the options selected by the highest number of people, which are some analytical skills that clearly state that there is a relationship between analytical skills and improved revenue.

Hence this can be otherwise said that analytical skills have a positive impact on improved revenue.

Hence **H6 is Supported**.

As per literature findings, business needs change is treated as the biggest challenge for a Business Analyst. The development and support of business information systems across different departments is the responsibility of a professional Business Analyst. Within an organization, they recognize challenges and opportunities and ultimately offer solutions that help accomplish its objectives. A Business Analyst's job description should cover dealing with financial statements and IT teams to build cost-optimizing programs and strategies and enhance internal and external reporting (Chiang, 2018). The results confirmed the literature review in section 2.4 and 2.9.

Based on the above discussions, the 3 hypotheses can be mapped according to the theoretical framework as follows :

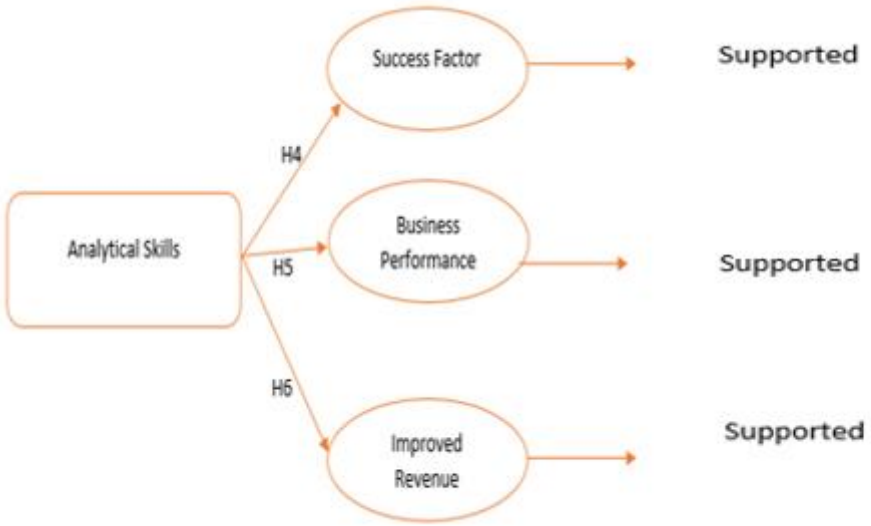


Figure 908. Framework of Hypotheses 4, 5 & 6

H7) Technical Skills have a positive impact on success factors.

In section 4.4, **Question 6** was about the primary skills required to be a business analyst. Among different choices, Technical Knowledge was selected by 210 people among 623, which is nearly half of the population. Hence technical knowledge is a much-required primary skill according to participants' view. Therefore, the success factor of a project will be dependent on some technical knowledge of a BA. Thus, hypothesis H7 can be accepted or otherwise; it can be said that there is a relationship between technical expertise and success factors.

Hence **H7 is Supported.**

As per literature findings, IT experts and IT systems are handled by Business analysts. Business analysts deal with understanding, growth, and management requirements. While a business analyst must have the conceptual, technological knowledge to evaluate the problem to be solved and interact with technical stakeholders, they do not need to write code or run database queries (Lubwama, 2020). The results confirmed the literature review in section 2.5 and 2.7.

H8) Technical Skills have a positive impact on business performance.

Section 4.4 (**Question 8**), which is about the technical skills a BA requires and four primary categories, was given as options such as Align information Technology Systems with business operations, providing internal IT support, managing web-based services, and customer support, Develops program and tests. Among these, aligning technology with processes was the highly selected option by the participants. Operations will always be based on the business aspects. Once the technology also fits with the methods, it can rapidly help improve the business's performance. Hence it can be said the technical skills have a positive impact on business performance.

The above findings prove hypothesis 8.

As per literature findings, the business analyst's primary role is to align the information technology systems with business operations. Hence it fits in both technology and business unit. Also, their other primary function is stakeholder management. Therefore, they also check with an external service provider, which improves the complete business performance (Coatney, 2018). The results confirmed the literature review in section 2.5 and 2.8.

H9) Technical Skills have a positive impact on improved revenue.

In section 4.4, **Question 6** was about the primary skills required to be a business analyst. Among different choices, Financial Planning was selected by 170 people among 623. Little technical knowledge is needed for proper financial planning as it involves buying the software tools and products. Also, in **Question 9,** which is about BA's benefits, 'achieving goals by cost-efficient manner' is the second-highest selected option from the given choices.

Literature findings say that every BA must have some technical knowledge for all the cost management analysis discussion. It helps in buying the tools and aligning the operations more cheaply and productively. Therefore, hypothesis H9 can be accepted or otherwise; it can be said that there is a relationship between technical knowledge and improved revenue (Gai, 2017). The results confirmed the literature review in section 2.5 and 2.9.

Hence **H9 is Supported**.

Based on the above discussions, the 3 hypotheses can be mapped according to the theoretical framework as follows :

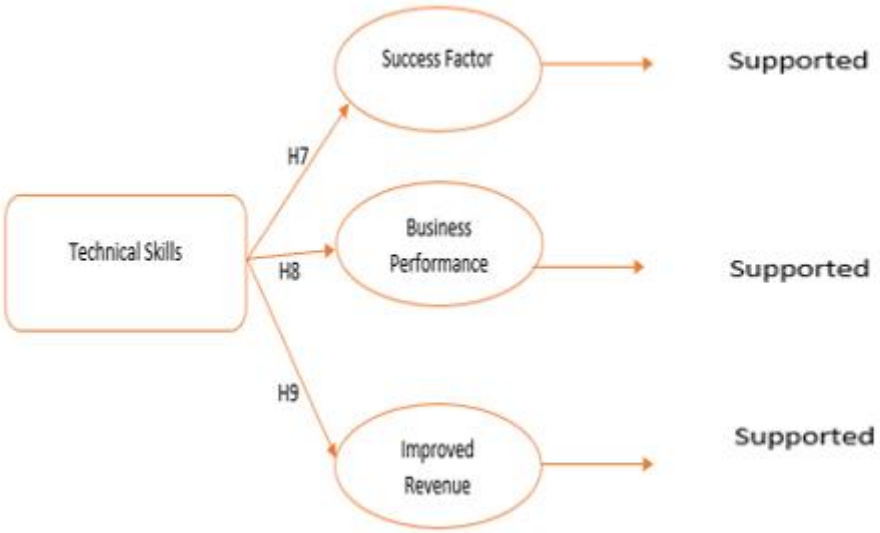


Figure 919. Framework of Hypotheses 7, 8 & 9

H10) Communication has a positive impact on success factors.

In section 4.4, **Question 6** was about the primary skills required to be a business analyst. Among different choices, Communication was selected by 287 people and resulted in the highest priority in the survey results with 14.44%. Hence communication is a much-required primary skill according to participants' view. Therefore, the success factor of a project will be dependent on communication. Thus, hypothesis H10 can be accepted or otherwise; it can be said that there a relationship between communication and success factors.

The literature says that communication includes the sender's transmission to the recipient of ideas, thoughts, or feelings through verbal or nonverbal means. This transition is of particular importance to the business, especially in the service sector, because service providers work with people based on communication. Contact plays a critical role in every sustainable plan or strategy (Gregoria, 2018). The results confirmed the literature review in sections 2.6 and 2.7.

To conclude, based on the survey results, **H10 is Supported**.

H11) Communication has a positive impact on business performance.

In section 4.4, **Question 11** was about the task results dependant on a business analyst. Among different choices, relationship with stakeholders was selected by 172 people and resulted in the second-highest priority in the survey results with 20.24%. Communication is a

much-required primary skill for maintaining a good relationship with clients. Stakeholders are the ones who give projects to a company based on their previous project delivery results. Hence the business performance will be dependent on proper communication with the stakeholders. Therefore, hypothesis H11 can be accepted or otherwise; it can be said that there a relationship between communication and Business performance.

The literature says it is essential for people to express themselves internally and externally through the appropriate mode(s) of communication to prepare and establish sustainable strategies and sustainable strategies. Therefore, to create effective communication, managers in an organization must channel what they mean to communicate to the recipient in a clear, straightforward, and accurate manner, whether oral or written. They should also consider gender and cultural differences in contact to achieve this goal (Lewis, Young, Mathiassen, Rai & Welke, 2017). The results confirmed the literature review in sections 2.6 and 2.8.

To conclude, based on the survey results, **H11 is Supported**.

H12) Communication has a positive impact on improved revenue.

In section 4.4, **Question 7** was about the goals of a business analyst. Among different choices, 'communicating new product progress' was selected by 149 people and resulted in the second-highest priority in the survey results with 18.10%. Communication is a much-required primary skill for promoting a product released by a company. Hence the company revenue will be dependent on proper communication. Therefore, hypothesis H12 can be accepted or otherwise; it can be said that there a relationship between communication and Improved Revenue.

Literature Findings states that analysts in the industry must be effective communicators, which means that they can encourage working sessions, ask the right questions, listen (really listen) to the answers, and absorb what is being said. Communication does not often happen face-to-face in the world of today. The ability to be a powerful communicator (via conference calls or web meetings) in a virtual setting is equally valuable (Al-Rawas & Easterbrook, 2016). The results confirmed the literature review in sections 2.6 and 2.9.

Hence Hypothesis 12 is Supported.

Based on the above discussions, the 3 hypotheses can be mapped according to the theoretical framework as follows :

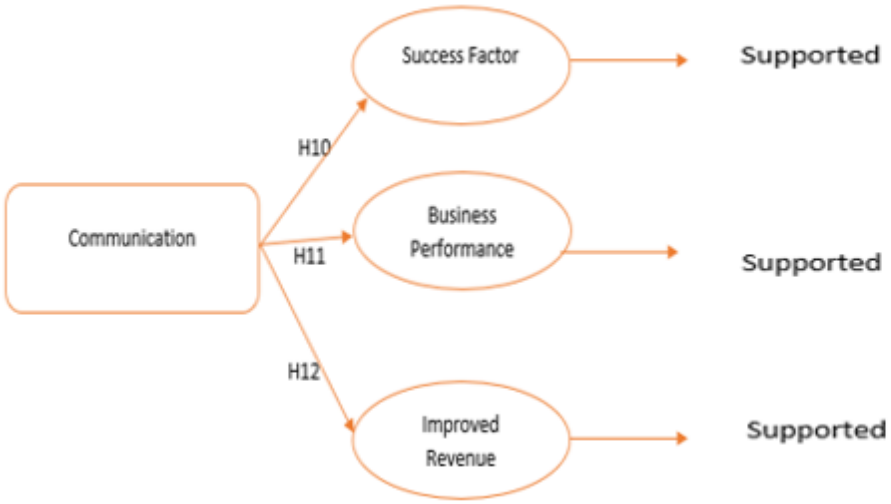


Figure 100 Framework of Hypotheses 10, 11 & 12

5.2) Association between independent variables and the actual firm growth

H13) Success Factors have a positive impact on Actual Firm Growth.

In section 4.4, **Question 12** was about the success factor dependency on a business analyst. Among 623 participants, 218 felt that the success factor dependency is 'moderately higher.' which was nearly 35% of the participant's choice. Hence the success factors will help in promoting the firm growth. Therefore, hypothesis H13 can be accepted or otherwise; it can be said that there a relationship between success factors and firm growth.

Literature findings state that the business analyst is ultimately responsible for finding and addressing issues concerning the business solution and works closely with the project manager to evaluate and suggest current business processes to increase the project's efficiency. Survey results are similar, as most participants have chosen the project's quality as the central task dependent on a BA (Poon & Wagner, 2014). The results confirmed the literature review in section 2.7.

Hence **Hypothesis 13 is Supported.**

H14) Business Performance has a positive impact on Actual Firm Growth.

In section 4.4, **Question 15** was about the primary services offered by a business analyst. Among 623 participants, 187 selected the option ‘Organizational Change’, which states that every BA plays a crucial role in organizational improvement. Hence, the organization's positive changes help improve business performance, promoting firm growth. Therefore, hypothesis H14 can be accepted, or otherwise, it can be said that there a relationship between business performance and firm growth.

Literature findings say that the market landscape is continually shifting. With cheaper and higher quality goods, new rivals are emerging. Innovations that are quicker and more powerful are being implemented. To remain successful and stay in the game, a business owner needs to keep on top of these. One way to do this is to bring in a business analyst to analyse the organization's practices, procedures, and workflows and make suggestions for changes (Duan, 2020). The results confirmed the literature review in section 2.8.

Hence Hypothesis 14 is Supported.

H15) Improved Revenue has a positive impact on Actual Firm Growth.

In section 4.4, **Question 7** was about the goals of a business analyst. Among different choices, ‘directing the growth’ was highly selected by the participants.176 people, with 22% of the population, have chosen to direct the growth as the primary goal. Directing growth is all about improving the revenue of a company. Hence the firm growth will be dependent on enhancing the revenue. Therefore, hypothesis H15 can be accepted, or otherwise, it can be said that there a relationship between firm growth and Improved Revenue.

Thoughts from the literature review state that the U.S. Department of Labour projects demand for business and management analysts will grow 14% from 2018 to 2028, much faster than average for all occupations due to the need for organizations to control costs improve efficiency (Wamba, 2017).

To achieve these goals, a Business analyst must examine the organization's current level of success and establish measures to strengthen and achieve the organization's objectives. Also, spotting inefficiencies and discovering ways of developing processes and workflows. Big data still aims in large part to deliver the right information to the right person at the right time in the correct forum but is now able to do so in a significantly more sophisticated form (Agarwal, 2014). The results confirmed the literature review in section 2.9.

To summarise, both the survey results in section 4.4 (Q7) and the findings proves the same point that directing the growth of the organization is the primary goal of a business analyst, and it also been the main success factor for actual firm growth, which directly improves their business performance and revenue.

Hence Hypothesis 15 is Supported.

Based on the above discussions, the 3 hypotheses can be mapped according to the theoretical framework as follows :

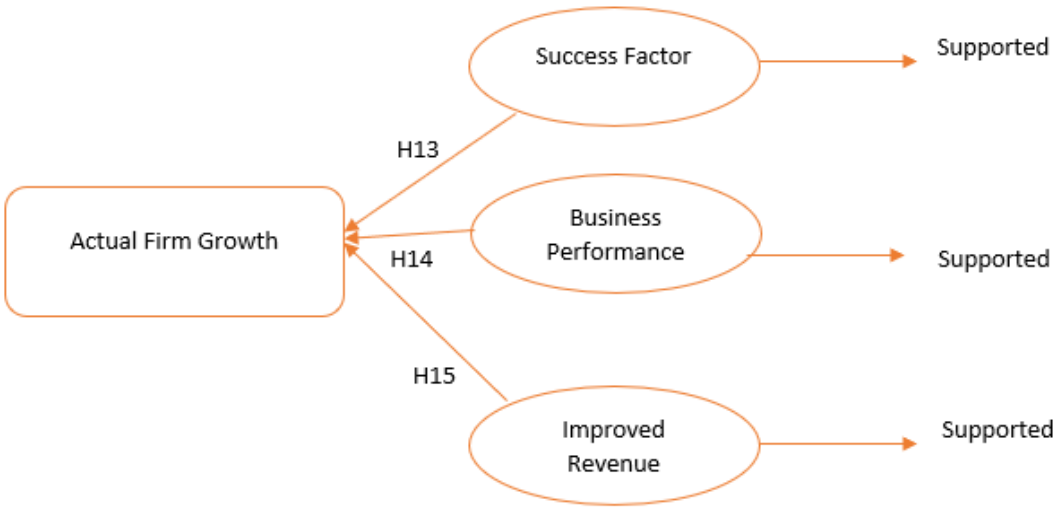


Figure 921 Framework for Hypotheses 13, 14 & 15

5.3) Conclusion

Based on the above discussions, all the research questions are proved, which is concluded in the below table. The research questions marked with the respective hypothesis are given in the table as well.

RQ 1: What factors influence the role of Business Analyst in Small to Medium-Scaled enterprises?

RQ 1.1: What are the benefits offered by a Business Analyst that may help in a firm's overall performance?

RQ 1.2: How does a Business Analyst add value to a project in which they are engaged?

RQ 1.3: How does a Business Analyst help in bridging the gap between business and IT?

Table 37: Research Questions and Hypothesis Results

Research Question	Hypothesis	Description	Result
RQ 1.2 RQ 1.3	H1	Stakeholder Management has a positive impact on success factors.	NOT SUPPORTED
RQ 1.1 RQ 1.2 RQ 1.3	H2	Stakeholder Management has a positive impact on business performance.	SUPPORTED
RQ 1.2 RQ 1.3	H3	Stakeholder Management has a positive impact on improved revenue.	SUPPORTED
RQ 1.2	H4	Analytical Skills have a positive impact on success factors.	SUPPORTED
RQ 1.1 RQ 1.2	H5	Analytical Skills have a positive impact on business performance.	SUPPORTED
RQ 1.2	H6	Analytical Skills have a positive impact on improved revenue.	SUPPORTED
RQ 1.2 RQ 1.3	H7	Technical Skills have a positive	SUPPORTED

		impact on success factors.	
RQ 1.1 RQ 1.2 RQ 1.3	H8	Technical Skills have a positive impact on business performance.	SUPPORTED
RQ 1.2 RQ 1.3	H9	Technical Skills have a positive impact on improved revenue.	SUPPORTED
RQ 1.2 RQ 1.3	H10	Communication has a positive impact on success factors.	SUPPORTED
RQ 1.1 RQ 1.2 RQ 1.3	H11	Communication has a positive impact on business performance.	SUPPORTED
RQ 1.2 RQ 1.3	H12	Communication has a positive impact on improved revenue.	SUPPORTED
RQ 1.2	H13	Success Factors have a positive impact on Actual Firm Growth.	SUPPORTED
RQ 1.1 RQ 1.2	H14	Business Performance has a positive impact on Actual Firm Growth.	SUPPORTED
RQ 1.2	H15	Improved Revenue has a positive impact on Actual Firm Growth.	SUPPORTED

6. CONCLUSION

In section 6.1, the researcher presents a critical analysis of the research process, discusses the limitation, and recommends future work.

In section 6.2, the researcher discussed the significance of the findings to the IT field.

6.1) Future Research

This research has been done in one country. The study can be expanded to understand more insights about BA. Firstly, the data was collected via an online survey tool with a convenience sample method. An online survey is an efficient instrument for collecting self-report data from respondents. However, due to the nature of self-report data, it is hard to avoid dishonest answers and respondents' bias. Convenience sampling is also a time-efficient method for data collecting. But the statistical significance of the findings may deviate from a critical statistical selection. For future research, the researcher recommends using various sampling method to avoid the above limitations.

Secondly, the geographical scope of this research is limited within India. However, people from different states from India have participated in this research. Furthermore, the economic and cultural background of each region could be diverse. All those may result in the difference of influential factors of a business analyst's requirement in the areas. Hence, to understand an employee’s perspective better, it is necessary to expand the geographic scope of research in the future.

Thirdly, the research approach can be expanded. The researcher chose a quantitative approach.

Quantitative analysis has been performed to examine the hypotheses. With the results of quantitative analysis, the answers to researcher questions have been retrieved. However, the quantitative approach can only reveal effects on specific aspects of knowledge. The quantitative results show more on what and to what extent but often fail to establish the why and how (Creswell, 2015). Hence, future researchers may consider the qualitative approach for further exploring.

Analysts bring convenience to a client’s understanding and help maintain a good relationship with the project resources. Understanding the factors behind the industry's choice of Business Analysts and each element's weight could help industrial improve competitiveness. Base on

the literature review in chapter 2, the research was examined and evaluated the importance of seven factors (Stakeholder Management, Analytical Skills, Technical Skills, Communication Skills, Success Factor, Improved Revenue, Business Performance). According to the previous chapters' analysis results, the importance of these four influential dependant factors is (ranked from high to low): Communication, Stakeholder Management, Analytical Skills, Technical Skills. The research aim can be considered as met.

6.2) Concluding Remarks

Decision making is a critical process in every business model. The rise in the implementation of business process management and service-based architecture creates a significant need for experts in business management. Since the early 1990s, business analysis has developed as an IS discipline that deals with underlying business issues, defining requirements, and evaluating relevant solutions. Business Analysis is growing incredibly worldwide. Understanding the factors behind business analysts' organizational choice and each influential factor's weight could help the industries optimize their strategy. This research focuses on the significant factors that impact organizations to choose Business Analysts in India. Based on the literature review in chapter 2, the study examined and evaluated the weight of the following factors: Stakeholder Management, Analytical Skills, Technical Skills, Communication, Success Factor, Business Performance, Improved Revenue.

This literature review emphasized each factor's importance and formulated the Research Questions for this research project. The philosophical worldview for this research is post-positivism, and a quantitative approach was used. The theoretical framework for this research is a Business Analyst Model (BAM) model. The sampling technique, data gathering, and data analysis method for this research are also discussed. The limitations of this research and future works are discussed in this report as well. The analysis was performed by using an IBM statistical analytics tool, SPSS. The online survey was conducted on social media tools such as WhatsApp and Facebook. The data was exported from the online portal into SPSS format. The researcher did the coding on the viable view page in SPSS. Descriptive analysis and Chi-square test have been performed to retrieve answers to the research questions.

The Chi-Square test is mainly performed to find the association between the variables. It shows whether the variables are related to each other. The 3 Demographic Questions (Q2, Q3, and Q4 are tested with the 4 Likert scale questions Q5, Q10, Q12, and Q16.

Likert Scale Questions

Q5) Do you find more opportunities for a Business Analyst Role in the market?

Q10) How would you rate your performance as a Business Analyst?

Q12) How much does a success factor depend on a Business Analyst?

Q16) In your opinion, does the use of professional requirements management tools helps to ensure good quality in a project.

Demographic Questions

Q2) Which age group do you fit in?

Q3) What is your gender?

Q4) What is your designation in your organization?

All the test results showed that there is no significance between the variables. Also this research is not dependent on the age or gender factors of the participants. Hence the Chi-Square test results performed for the survey questions are rejected.

For sampling, a population size of 1,200,000 was considered, with a confidence interval of 4 and a confidence level of 95%; hence the sample size for this research was 600. In this survey, a total of 623 responses were collected. The number of responses reached a statistically significant number.

From the descriptive analysis results, the researcher can conclude that hypothesis 1 is not supported, which is given below in red, and all the other 14 hypotheses are supported.

H1) Stakeholder Management has a positive impact on success factors.

H2) Stakeholder Management has a positive impact on business performance.

H3) Stakeholder Management has a positive impact on improved revenue.

H4) Analytical Skills have a positive impact on success factors.

H5) Analytical Skills have a positive impact on business performance.

H6) Analytical Skills have a positive impact on improved revenue.

H7) Technical Skills have a positive impact on success factors.

H8) Technical Skills have a positive impact on business performance.

H9) Technical Skills have a positive impact on improved revenue.

H10) Communication has a positive impact on success factors.

H11) Communication has a positive impact on business performance.

H12) Communication has a positive impact on improved revenue.

H13) Success Factors have a positive impact on Actual Firm Growth.

H14) Business Performance has a positive impact on Actual Firm Growth.

H15) Improved Revenue has a positive impact on Actual Firm Growth.

All 4 dependent variables: stakeholder management, technical skills, analytical skills, and communication, are influential factors for the three independent variables: project success factor, improved business performance, and revenue, significant factors for actual firm growth. But Stakeholder management is not an influential factor for a project success factor as hypothesis 1 is not supported.

References

Agarwal, R., & Dhar, V. (2014). Big data, data science, and analytics: the opportunity and challenge for is research. Journal Storage Journals, 443-448.

Al-Rawas, A., & Easterbrook, S. (2013). Communication problems in requirements engineering: A field study. Proceedings of the first Westminster conference on professional awareness in software engineering royal society, 1-2.

Arvidsson, S. (2015). The corporate communication process between listed companies and financial analysts. Corporate communications: An International Journal, 25(4).

Block, S. B. (2019). A study of financial analysts: practice and theory. Financial Analysts Journal, 55(4), 86-95.

Brady, J., & Denison, B. (2016). The business analyst-in training. Americas Conference on Information Systems 2016 proceedings, 255.

Cadle, J., Paul, D., & Turner, P. (2015). Business analysis techniques: British informatics society limited. Business Process Management Journal, Vol 22(1), 75-88.

Chiang, R. H. (2018). Special issue: Strategic value of big data and business analytics. Journal of Management Information Systems, Vol 35(2), 383-387.

Coatney, k. (2018). The business value of information technology, big data analytics, and consumer health applications. Annuals of Spiruharet University, Journalism studies, 30-52. 23.

Creswell, J. W. (2014). Research design: qualitative, quantitative, and mixed method approaches (6 ed.). Los Angeles: Sage Journals, Vol 5(2).

Crossan, M. M. (2015). An organizational learning framework: From intuition to institution. Academy of Management Journals, Vol.24(3), 522-537.

Dawkins, J. (2014). Corporate responsibility: The communication challenge. Journal of Communication Management, Vol 9(2), 108-119.

Duan, Y. (2020). Understanding the impact of business analytics on innovation. European Journal of Operational Research, 673-686.

Flothmann, C., Hoberg, K., & Wieland, A. (2018). Competency requirements of supply chain planners & analysts and personal preferences of hiring managers. Supply chain management: An International Journal, Vol 23(6),480-499.

Gai, P. (2017). Systemic risk in modern financial systems: analytics and policy design. Journal of Risk Finance, Vol 8(2),156-165.

Gregorio, D. D. (2015). How the business analyst supports and encourages collaboration on agile projects. Paper presented at the 2015 IEEE International Systems Conference SysCon 2015.

Hailes, J. (2014). Business analysis based on the business analysis body of knowledge ® guide version 2–a pocket guide: Van Haren.

Hoerl, R. W., & Snee, R. D. (2020). Statistical thinking: improving business performance: John Wiley & Sons. International statistical review, Wiley online library.

Ioana, B., Diana, C., & Sabău, P. (2014). Using dashboards in business analysis. Annals of the University of Oradea, economic science series, Vol.23(1), 851-856.

Ivanov, P. (2016). The role of IT business analyst in a big data project-data-driven approach to business analysis. Central and Eastern European Online Library, Computer science and education in computer science, 12(1), 289-305.

Jackson, D., & Chapman, E. (2015). Empirically derived competency profiles for Australian business graduates and their implications for industry and business schools. The International Journal of Management Education, 10(2), 112-128.

Jengchung, V., Chen, S. (2016). Facebook c2c social commerce: a study of online impulse buying. Decision support systems, Science Direct Journals, 83(1), 57-69.

Johnson, S. B., Farach, F. J., Pelphrey, K., & Rozenblit, L. (2016). Data management in clinical research: synthesizing stakeholder perspectives. Journal of Biomedical Informatics, 60, 286-293.

Kelly, A. (2015). On management: the business analyst's role. Elsevier, 9-11.

Kieran, C. (2020). Using business analytics to enhance dynamic capabilities in operations research: case analysis and research agenda. European Journal of Operational Research, Vol.281(3), 656-672.

Ken, P., Charles, E. G., & Tuure, T. (2014). Extending critical success factors methodology to facilitate broadly participative information systems planning. Journal of Management Information Systems, 20(1), 51-85.

Lee, C. K., & Han, H. (2018). Analysis of skills required for entry-level programmer/analysts in fortune 500 corporations. Journal of Information Systems Education, 19(1), 17.

Leidecker, J. K., & Bruno, A. V. (2018). Identifying and using critical success factors. Long-range planning, Science Direct Journals, 17(1), 23-32.

Lewis, M., Young, B., Mathiassen, L., Rai, A., & Welke, R. (2017). Business process innovation based on stakeholder perceptions. Information knowledge systems management, Central and Eastern European online library, 6(1, 2), 7-27.

Litecky, C. R., Arnett, K. P., & Prabhakar, B. (2014). The paradox of soft skills versus technical skills in IS hiring. Journal of Computer Information Systems, 45(1), 69-76.

Lubwama, R. (2020). Optional technical skills. On the inside track to excelling as a business analyst, Springer Journals, (41-44).

Misic, M., & Russo, N. (2016). Educating systems analysts: a comparison of educators' and practitioners' opinions concerning systems analyst tasks and skills' relative importance. Journal of Computer Information Systems, 36(4), 86-91.

Misic, M. (2016). The skills needed by today's systems analysts. Journal of Systems Management, 47(3), 34.

Mitka, I., & Okręglicka, M. (2015). Managing complexity: A discussion of current strategies and approaches. Procedia Economics and Finance, Science Direct Journals,27, 438-444.

Gill, J. (2020, July). About the tech sector - nztech. Retrieved from NZ tech https://nztech.org.nz/info-hub/about-the-sector/.

Neely, A., Adams, C., & Kennerley, M. (2014). The performance prism: the scorecard for measuring and managing business success. Prentice hall financial times London, Pearson Education,377.

Ogden, S., & Watson, R. (2014). Corporate performance and stakeholder management: balancing shareholder and customer interests in the Uk privatized water industry. Academy of Management Journal, 42(5), 526-538.

Olszak, C. M., & Ziemba, E. (2015). Critical success factors for implementing business intelligence systems in small and medium enterprises on the example of upper silesia, Poland. Interdisciplinary Journal of Information, Knowledge, and Management, 7(2), 129-150.

Park, J., & Jeong, S. R. (2016). A study on the relative importance of underlying competencies of business analysts. Tiis, 10(8), 3986-4007.

Peffers, K., Gengler, C. E., & Tuunanen, T. (2017). Extending critical success factors methodology to facilitate broadly participative information systems planning. Journal of Management Information Systems, 20(1), 51-85.

Poon, P., & Wagner, C. (2015). Critical success factors revisited: success and failure cases of information systems for senior executives. Decision support systems, Science Direct Journals, 30(4), 393-418.

Rahul, C. (2016). Effective business solutions with big data analytics: key for business growth. Globsyn Management Journal, 87-96.

Rensburg, A. (2014). Supporting business process design through a business fractal approach. South African Journal of industrial engineering, 50-61.

Rivera, D. (2015). A dashboard to support the management of business analytics capabilities. Journal of Decision Systems., Vol 24(1), 73-86.

Sanders, N. R. (2017). An empirical study of the impact of e-business technologies on organizational collaboration and performance. Journal of Operations Management, 25(6), 1332-1347.

Sindwani, P. (2020, 06, 22). From TCS and Infosys to Microsoft and kiss flow — this is what top execs have to say about productivity in remote working | bus. Retrieved from business insider.in: https://www.businessinsider.in/business/corporates/news/tcs-infosys-and-microsoft-execs-share-ideas-on-world-productivity-day/articleshow/76462291.cms

Sonteya, T., Seymour, L., & Willoughby, K. (2014). Towards an understanding of the business process analyst: an analysis of competencies. Journal of Information Technology Education, 43-63.

Shuraida, S., & Barki, H. (2014). The influence of analyst communication in IS projects. Journal of the Association for Information Systems, 14(9), 2.

Sumner, M. (2015a). Critical success factors in enterprise-wide information management systems projects. Paper presented at the proceedings of the 2015 ACM Sigcpr Conference on Computer Personnel Research.

Sumner, M. (2015b). Critical success factors in enterprise-wide information management systems projects. Paper presented at the 2015 ACM sigcpr conference proceedings on computer personnel research, New Orleans, Louisiana, USA.

Sumner, M. (2016). Risk factors in enterprise-wide/ERP projects. Journal of Information Technology, 15(4), 317-327.

Tsui, E., & Malhotra, Y. (2015). Integrating knowledge management technologies in organizational business processes: getting real-time enterprises to deliver real business performance. Journal of Knowledge Management, Vol 9(1).

Urquhart, C. (2017). Exploring analyst-client communication: using grounded theory techniques to investigate interaction in informal requirements gathering. In information systems and qualitative research (149-181): Springer Journals.

Valenti, S., Panti, M., & Cucchiarelli, A. (2018). Overcoming communication obstacles in user-analyst interaction for functional requirements elicitation. Acm sigsoft software engineering notes, 23(1), 50-55.

Venkataraman, J. (2014). Seven steps to mastering business analysis. Iup Journal of Marketing Management, 10(1), 76.

Verma, N., & Singh, J. (2015, 13-14 Feb. 2015). Improved web mining for e-commerce website restructuring. Paper presented at the 2015 IEEE international conference on computational intelligence & communication technology.

Weick, K. E. (1992). Agenda setting in organizational behavior: a theory-focused approach. Journal of Management Inquiry, 1(3), 171-182.

White, C. (2018). The value of business analysis. Interview, 3-5.

Wimsatt, A. (2018). Business analytics in the marketing curriculum: a call for integration. Springer Journals, 1-5.

Wu, H. c. (2015). A multi-dimensional and hierarchical model of service quality in the gaming industry. International Journal of Tourism Sciences, 90-119.

Watson, J., & McNaughton, M. (2017). Gender differences in risk aversion and expected retirement benefits. Financial Analysts Journal, 63(4), 52-62.

Wamba, S. F., Gunasekaran, A., Akter, S., Ren, S. J.-f., Dubey, R., & Childe, S. J. (2017). Big data analytics and firm performance: the effects of dynamic capabilities. Journal of Business Research, 70, 356-365.

Wysocki, K. (2011). The business analyst/project manager. Wiley online library, New Jersey: Hoboken.

Yap, C., Soh, C., & Raman, K. (2015). Information systems success factors in small business. Omega, Science Direct Journals, 20(5-6), 597-609.

Zeni, R. H. (2014). The value of analyst interaction with revenue management systems.

Journal of Revenue and Pricing Management, 2(1), 37-46.

Appendix

A1: Survey Questions

Below mentioned are the questions to be surveyed in this research.

Role of Business Analyst

1. Are you over the age of 18 years?

- ◯ Yes
- ◯ No

2. Which age group do you fit in?

- ◯ Under 18
- ◯ 18-24
- ◯ 25-34
- ◯ 35-44
- ◯ 45-54
- ◯ 55-64
- ◯ 65+

3. What is your gender?

- ◯ Male
- ◯ Female
- ◯ Others
- ◯ Do not want to state

4. What is your designation in the organization?

- ◯ Software Developer
- ◯ Project Manager
- ◯ QA Tester
- ◯ Network Administrator
- ◯ Business Analyst
- ◯ Help Desk Analyst

5. Do you find more opportunities for Business Analyst role in market?

- ◯ Yes
- ◯ No

6. What are the primary skills required to be a business analyst? (Select all that apply)

- ☐ Communication
- ☐ Technical Knowledge
- ☐ Data Analysis
- ☐ Problem Solving
- ☐ Document Writing Skill
- ☐ Decision Making
- ☐ Stakeholder Management
- ☐ All of the above
- ☐ Financial Planning

7. What is the goal of the business analyst?

- [ ] Figure out sales
- [ ] Directing the Growth
- [ ] Communicating new product progress
- [ ] None of the above
- [ ] All of the above
- [ ] Others

Other (please specify)

Q8) What are the technical skills does a BA require?

- [ ] Align information technology systems with business operations
- [ ] Providing internal IT support
- [ ] Manage web based services and customer support
- [ ] Develops programs and tests
- [ ] All of the above
- [ ] Others

Q9) What are the benefits offered by business analysis,if any?

- [ ] Better Communication with stakeholders
- [ ] Helps in the recruitment process
- [ ] Improved collaboration between resources
- [ ] Helps in payroll
- [ ] Achieve goals by the cost-efficient manner
- [ ] Time efficient
- [ ] All of the above
- [ ] Others

Q10) How would you rate your performance as a Business Analyst?

- ○ Far above average
- ○ Moderately above average
- ○ Slightly above average
- ○ Average
- ○ Slightly below average
- ○ Moderately below average
- ○ Far below average

Q11) Among the below elements which are highly dependent on a business analyst?(One or more apply)

- [ ] Delivery of the project
- [ ] Relationship with the stakeholders
- [ ] Quality of the project
- [ ] All of the above
- [ ] Others

Q12) How much does a success factor depend on a Business Analyst?

- ○ Much higher
- ○ Moderately higher
- ○ Slightly higher
- ○ About the same
- ○ Slightly lower
- ○ Moderately lower
- ○ Much lower

Q13) What future career path do you foresee for Business Analysts?

- ☐ Business Analytics
- ☐ Business Transformation
- ☐ Strategy Management
- ☐ Product Management
- ☐ Others

Q14) In 5 years time what role do you see yourself in?

- ○ Manager
- ○ Team Lead
- ○ Business Analyst
- ○ Unchanged
- ○ Others

Q15) What do you consider to be the main services offered by a Business Analyst?

- [ ] Requirement Analysis
- [ ] Elicitation and Collaboration
- [ ] Planning and Monitoring
- [ ] Operation and Process change
- [ ] Roadmap Development
- [ ] Organizational Change
- [ ] Project Management
- [ ] Cost Management
- [ ] Other

Q16) In your personal opinion does the use of professional requirements management tools helps to ensure good quality in a project?

- ○ Yes
- ○ No

Q17) What is the biggest challenge faced by a Business Analyst?

- [ ] Misconception of BA's scope of work
- [ ] Conflicts with stakeholders
- [ ] Undocumented Processes
- [ ] Changing business needs
- [ ] Necessity of high cost tools
- [ ] Others

Q18) Within your organization where does the business analysis competency sit?

- ○ Within Technology
- ○ Within a Business Unit
- ○ External Service Provider
- ○ As a separate unit
- ○ Others

Q19) Which methodology does your project applies the most?

- ○ Waterfall
- ○ Agile
- ○ Hybrid
- ○ Other

Q20) In your personal opinion, please select among the following statements as you see them today

- ○ The role of a Business Analyst is gaining in recognition
- ○ I personally feel BA have a good value in industries
- ○ Increasing investment in Business Analysis would reduce the project risks
- ○ The role is well understood in the market
- ○ Quality of the work delivered by the business analyst directly affects the outcome of the project

A2: Wintec Ethics Form

Wintec WAIKATO INSTITUTE OF TECHNOLOGY Te Kuratini o Waikato	Research and Postgraduate Office (RPGO) Human Ethics in Research Group (HERG)

Please refer to the Ethics-Guidelines before finishing this form.

The RPGO is situated at the City Campus, D-Block (Offices D2.22 – D2.24), e-mail research@wintec.ac.nz or phone Megan Allardice Ext. 3582 for more information.

Please see the last page of this document for detailed instructions for completing this form.

1.0 PROJECT TITLE	
	The Role of Business Analysts in Organizations

2.0 RESEARCHER(S)		
2.1	Primary researcher's name	Gayathri Jayapalan
2.2	School//Centre/Unit	Wintec
2.3	Contact Details (Telephone and E-mail)	Telephone: 0211401303 E-mail: gayjay10@student.wintec.ac.nz
2.4	Is this application a:	☒ Student Application ☐ Staff Application
2.5	If this is a student application, please provide the Module code here	INFO803
2.6	Is this project a staff application that utilizes work partially or wholly undertaken by students who are not participants (e.g., data	Not applicable

	collection conducted by a researcher's class)?	
2.7	If so, please clearly describe what the role of these students is to be in this research, what the work will be used for explicitly (including any issues regarding authorship of research outputs such as journal articles), and what steps have been taken to ensure students are aware of this.	Not applicable
2.8	Name of other Researcher(s) and positions. (If this is a student application, please provide the name(s) of the project supervisor(s) and indicate that they are supervisors here.)	Dr. Kay Fielden
2.9	Contact Details of other researchers and supervisors. (Telephone and E-mail)	Telephone: E-mail: Kay.Fielden@wintec.ac.nz
2.10	Is this application:	☒ A new application ☐ A subsequent approval request following a significant change to an already approved application.

3.0 PROJECT TIMELINE	
	The projected start date for **<u>data collection</u>** *(once this ethics application is approved) projects can only begin once applications have been accepted, regardless of the level of risk)*: March 15, 2021. Projected end date: End of semester

4.0 PROJECT SUMMARY (please include your research purpose and objectives, the methodology will be dealt with in Section 6)

5.0 PROJECT METHODOLOGY (including methods for data collection)

An online survey will be used to get the knowledge of employees about the role of Business Analyst. For this research, a population size of 1,200,000 (IT employees from India) will be considered, with a confidence interval of 4 and a confidence level of 95%, hence generating a sample size of 600.

Business Analysis Model (BAM) is the Theoretical Framework used, identifying the factors influencing BA in organizations. This research will use online tools to analyze the results and retrieve answers to the research questions.

6.0 CONSIDERATION OF ETHICAL ISSUES AND PROCESSES

This research aims at understanding the role that business analysts play within organizations. The purpose of this research is to know how business analysis helps improve a project's success factors, best practices in the application of business analysis, and the use of business analysis benefits in a company. Business Analysis is a partnership between business and IT operations for continuous execution and integrated integration to enhance the Business' efficiency. This method speeds up development and operations over the entire product lifecycle. By integrating various strategies and resources, market research improves how products and services are provided. All manual processes for installation, delivery, testing, etc., are enhanced in an agile way by allowing tech professionals to detect issues in the program at an early stage of development or installation by improving team and individual work speed. As part of the ethics requirements, the following will be considered in this research.

Risk of harm

The research aims to gather information about business analysts' role and their usage in firms. The details will be collected entirely online. This survey will be gathering information about their necessary information and nothing related to discrimination of either people or group or creating views either on people or group. The survey participants will be informed that there will not be any criminal risks or civil liabilities. The collection of information will be legal. The method of approach assures that it will not affect their relationships and employability. This research will also gather information about IT professionals' work roles and their business analysis perspectives to gather demographic details.

Informed and voluntary consent

This research will include participants whom the researcher can identify to give information about the Business analyst role and its usage. The participants will be IT employees from India. This research will only include participants over the age of 18 who are not in a dependent situation, such as people with a disability, or residents of a hospital, nursing home, or prison, or vulnerable in any other way. There will be a screening page where participants above 18 years of age and who have IT experience in India are only allowed to attend the survey.

Privacy and confidentiality

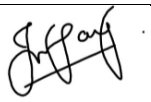
This research will make sure the privacy of the participants is protected. Confidentiality is maintained by not collecting sensitive information about them.

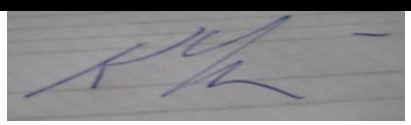
Procedural

This research does not require any further ethical requirement or approval from an outside organization or a Wintec Institutional Consent form.

Researcher(s) signature(s) (the name and signature of all researcher(s) are to be included):

Name	Signature	Date

Gayathri Jayapalan		August 29, 2020

Primary Supervisor's signature (if this is a student application):		
Name	**Signature**	**Date**
Dr. Kay Fielden		07/01/2021

Research Leader's signature:		
Name	**Signature**	**Date**

A3: HERG Low-Risk Application Form

HERG Chairperson or delegated representative's signature (RPGO use only):

LOW-RISK HUMAN ETHICS RESEARCH APPLICATION

Approval reference WTLR45030920

Name	Signature	Date
Megan Allardice		8 September 2020

COMPLETING THIS FORM

Please note: A low-risk research project is in which the behavior of the potential/actual risk of harm to participants or the researcher is minimal and no more than is typically encountered in daily life. If, as a staff member, you are new to research or are in any doubt about which application to submit, please consult with your Research Leader. If you are a student, your Supervisor will be able to give you advice. If you are still in any doubt, do not hesitate to consult the RPGO.

Specific Instructions

- All questions are to be answered. Note the items within require a mix of descriptions, yes/no answers and cross the box (**Double-click on checkboxes with your mouse and select 'Checked' from the options under 'Default Value'**).
- Research Leaders need to review the information in this form and sign it off before applying it to the RPGO.
- Please forward one signed original copy to the RPGO, together with an electronic version, to research@wintec.ac.nz.
- Low-Risk Human Ethics in Research Applications also need to be accompanied by a duplicate of the Info Sheet, Consents Form, and any Questionnaires or Interview Schedules for consideration. If Questionnaires/ Schedules are not yet confirmed, please supply the latest draft.
- No questions are to be deleted, even those that you feel you are not required to answer.
- No part of the research requiring ethical approval should commence before approval being confirmed.
- Applicants will receive official confirmation of submission via e-mail from the RPGO once all conditions of this form have been completed.
- If you want to apply for an extension on a previously approved project, please contact the RPGO, as you will probably not need to submit a separate application.
- Applicants will be advised of the outcome of their application to the Human Ethics in Research Committee **no later than ten working days** after the completed and confirmed submission of this application.

HUMAN ETHICS IN RESEARCH LOW RISK APPLICATION FORM - CHECKLIST	
Research project title:	**Role of Business Analysts in organizations**
Name of primary researcher:	**Gayathri Jayapalan**

Attached, please find (as applicable) in the order listed below.	
Completed HERG Low-Risk Application Form	☒ Yes ☐ No
Consent Form for participants	☒ Yes ☐ No
Information Sheet for participants	☒ Yes ☐ No
Copy of Focus Group Questions, Interview Schedule, or similar	☒ Yes ☐ No

A4: Participant Consent Form

Role of BAs in small-medium businesses

Participant-Consent Form

I…… (participant name) consent to be a contributor to the research mentioned above, and I confirm the following:

1. I am knowledgeable of the objective and goal of this research.
2. I know the model of my participation.
3. I know the aids that may be resulting from this mission.
4. I have been updated about any possible injurious significances to me of taking part in this venture.
5. I know that I may pull out from the plan at any time (without penalties).
6. I realize that my secrecy and confidentiality are sure, excluding where I accord to waive them.
7. I realize that information gathered from me will be treated confidentially, except where I consent to waive confidentiality.
8. I agree to preserve the secrecy and confidentiality of other contributors and the privacy of the data they contributed.

By finishing this survey, I offer my consent to contribute to this research.

Participant ……. Date……

Principal Researcher …….
Date…….

A5: Participant Information Sheet

Participant Data Sheet

Project Title: Role of Business Analysts in organizations

Institution: Wintec, Hamilton City Campus

Researcher: Gayathri Jayapalan

About the survey

I wish to request you to participate in this research by completing an online survey. Please have some time to read the material before you go ahead, which will help you understand this research's purpose and what it would involve. You can discuss it with others and be free to inquire if there is anything that you may not be sure about. Thank you for reading this.

Drive of this research

This research project aims to identify the factors that influence BA in organizations. This study will help understand the impact of BA in organizations and their overall performance and the benefits offered to the company, and the challenges students face who do not have the proper knowledge.

An online survey will be used to gather the views of students and employees in this project.

About the researcher

Gayathri Jayapalan conducts this research, a student of Wintec, Hamilton City Campus, as part of her Master's in applied information technology research project.

The research is a self-funded project, and the researcher will not receive any personal financial benefit from your involvement in this research project.

Expectation from participants

You have been invited to participate in this research because you are an IT student or an

employee in IT organizations that know information technology. You have the required expertise and experience that can prove to be significant for this research.

Duration of the survey

This online survey will not take more than 15 minutes of your time to complete.

Explain where the data will be collected

The information will be collected through an online survey.

What will happen to the information provided?

The information provided by you will be used to generate results for this research project.

Do you have to participate?

If you are pursuing your higher education in New Zealand and are 18 years of age and above, you will participate in this research. Participation in this online survey is voluntary and up to you to decide whether you wish to attend. However, if you want to go ahead, you can keep a copy of this information sheet, and you should indicate your agreement in the online consent form. You are free to withdraw your participation at any point in time without providing any reason.

Will your participation be kept confidential?

All the information collected from you during the research will be kept confidential. You will not be identified in any form.

Will your participation be acknowledged, and how?

All participant's information will be kept confidential. The results of this research will be made

available to the participants only on request.

Where will the research results be made available?

The results of this research will be published in the research report. Your information will always be kept confidential. However, if you wish to receive a copy of this report, kindly send an e-mail to the author.

Contacts for further information

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